

2ND ANNUAL • JUNE 28 2019

SAN JOAQUIN
GENERAL HOSPITAL

RESEARCHday

DEPARTMENT OF SURGERY



SAN JOAQUIN

GENERAL HOSPITAL

8:00 AM - 1:30 PM • Conference Room 1A

2019 SAN JOAQUIN
GENERAL HOSPITAL
RESEARCH  day
DEPARTMENT OF SURGERY

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PROGRAM SCHEDULE

BREAKFAST – MEET & GREET

7:15-7:55 Welcome and Introduction Dinesh Vyas, MD, FACS

GUEST SPEAKERS

8:00-8:40 “The DaMattox Code – The Final Hours in the Life of Princess Diana”
..... Kenneth Mattox, MD, FACS

8:40-9:10 “Surgical Advances with Cancers of the Liver, Pancreas, Gallbladder and Bile Duct”
..... Bryan Clary, MD, FACS

9:10-9:40 “Unravelling a New Risk Factor for Aortic Disease”
..... Scott LeMaire, MD, FACS

9:40-10:10 “Basic Science Research and History of the Nobel Prize in Medicine”
..... A. Hari Reddi, MS, PhD

10:10-10:25

BREAK

PANEL DISCUSSION DIGITAL HEALTH & DIGITAL SURGERY

10:30-11:25 PANEL MEMBERS: Kenneth Mattox, MD, FACS, Bryan Clary, MD, FACS,
Scott LeMaire, MD, FACS and A. Hari Reddi, MS, PhD

MODERATOR: Dinesh Vyas, MD, MS

TOPICS: 1. Large Data Science and the Future of Medicine and Surgery
2. The Role of Digital Health and Financial Implications
3. The Role of Scientific Journals in Evaluating Digital Surgery

RESEARCH PODIUM PRESENTATIONS

- 11:25-11:30 Introduction
- 11:30-11:36 Candelario J, Chaturvedi LS, Vyas D. Irreversible Proteasome inhibitor Carfilzomib modulate proliferation and apoptosis by down-regulating cyclinD1, DKN1A/p21, c-Jun in MDA-MB-231 cells.
- 11:36-11:42 Ang A, Tan F, Macias K, James S, Sidh J, Lenhard JR. Carbapenem-Resistant *Acinetobacter baumannii* protects *Staphylococcus aureus* during -lactam Exposure.
- 11:42-11:48 Patel AM, Woldemariam T, Sprenger S, Vyas D, Chaturvedi LS. Aqueous Leaf Extract of *Ocimum Sanctum* L (Tulsi) Enhances Inhibition of Proliferation of Human Triple-negative Breast Cancer MDA-MB-231 Cells.
- 11:48-11: 54 Singh S, Shelton T, Robinson EB, Nardo L, Escobedo E, Jackson L, Kreulen C. The Influence of Percentile Weight-Bearing on Foot Radiographs.
- 11:54-2:00 Saadat M, Arquette J, Chung HJ, Mostamand M, Lee SY. Improving Heart Failure Outcomes, a Team-Based Approach.
- 12:00-12:06 Bahri G, Druar N, Vyas D, Saadat M, Seraj S. Necrotizing fasciitis health cover age: Does insurance status affect the severity of the disease as measured by cost and length of stay?
- 12:06-12:12 Vosoughi E, Jung SM, Parikh K, Seraj S. The Economic Benefits of Early Palliative Care Consultation on Length-of-Stay and Cost-of-Care in a Safety-Net Hospital.
- 12:12-12:18 Tan T, Kennedy F, Lewis A, To M, Mashayekhi K. Utilizing a Checklist as a Tool for Safe Implementation of Percutaneous Tracheostomy in the setting of a Community based Surgical Residency Training Hospital.
- 12:18-12:24 Ha J, Arquette J. Comparison of an ICU-specific and Hospital-wide Antibigram.

POSTER PRESENTATIONS & COMPETITION

- 12:30 POSTER EVALUATORS: Rashna Ginwalla, MD, Frank Kennedy, MD, Joseph Izzo, MD, Mohsen Saadat, MD, Syung Min Jung, MD, Asma Jafri, MD, Elyas Parsa, MD and Sheela Kapre, MD

LUNCH

VISITOR BIOSKETCH — CHIEF GUEST —

KENNETH L. MATTOX MD, FACS

“The Father of Modern Trauma Surgery”

**“The DaMattox Code – “The Final
Hours in the Life of Princess Diana”**

Dr. Kenneth L. Mattox is a Distinguished
Service Professor at Baylor College of
Medicine and Cardiothoracic Surgery,

Chief of Staff and Surgeon-in-Chief at Ben Taub Hospital. Dr. Mattox helped
develop the internationally renowned Ben Taub Hospital Emergency Center
and its equally respected Trauma Center. He has been named among the Best
Surgeons in America five times. For the past 47 years he has organized the
Trauma, Critical Care, and Acute Care Surgery Conference at the Caesar’s
Palace casino in Las Vegas that attracts over 1000 surgeons from all over
the world every year.

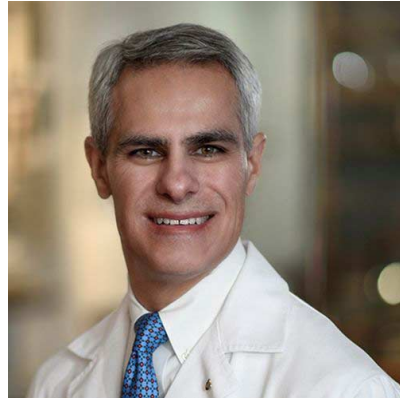


VISITOR BIOSKETCH

SCOTT A. LEMARIE MD, FACS

“Unraveling a New Risk Factor for Aortic Disease”

Dr. Scott A. LeMaire the Jimmy and Roberta Howell Professorship of Cardiovascular Surgery, Vice Chair for Research, Michael E. DeBakey Department of Surgery, Professor of Molecular Physiology and Biophysics Director of Research, Division of Cardiothoracic Surgery, at Baylor College of Medicine. The focus of his research program derives directly from his clinical interest in the surgical treatment of patients with thoracic aortic aneurysms and dissections, encompasses outcomes after thoracic aortic repair, strategies for preventing perioperative complications, genetic factors related to aortic disease, and the pathobiology of aortic wall degeneration.



VISITOR BIOSKETCH

BRYAN CLARY MD, FACS

**“Surgical Advances with Cancers of the Liver,
Pancreas, Gallbladder, and Bile Ducts”**

**Surgeon-in-Chief, Chair and Professor of
Surgery, UC San Diego Medical Center**

Bryan Clary, MD, is a board-certified surgeon who provides surgical care for patients with diseases of the liver, pancreas and bile ducts.

He is a part of the gastrointestinal and pancreatic cancer teams at Moores Cancer Center at UC San Diego Health. Dr. Clary has extensive experience in performing surgeries associated with cancers of the liver, pancreas, gallbladder, and bile ducts. He is nationally recognized for excellent outcomes following these complex procedures. Dr. Clary served as chief of hepatobiliary surgery at Duke University Medical Center for 15 years, and as vice-chief of the Division of Surgical Oncology. He earned numerous awards for his clinical care, teaching and research. His research is focused on developing new therapies for metastatic liver cancer and on improving surgical outcomes in patients undergoing surgery for cancers of the liver, pancreas and bile ducts. He is a fellow of the American College of Surgeons (FACS) and serves on the executive councils of the Society for Clinical Surgery and the Americas Hepato-Pancreato-Biliary Association.



VISITOR BIOSKETCH

A. HARI REDDI MS, PhD

**“Basic Science Research and History of
the Nobel Prize in Medicine”**

Dr. A. Hari Reddi is a Distinguished Professor and holder of the Lawrence J. Ellison Endowed Chair in Musculoskeletal Molecular Biology at the University of California, Davis. He was the first recipient of the Marshall Urist Award for Excellence in Tissue Regeneration Research. Dr. Reddi's research has played an indispensable role in the identification of bone morphogenetic proteins (BMPs) that cause new bone to grow. He is the founder of the International Conference on Bone Morphogenetic Proteins (BMPs). He organized the first conference at the Johns Hopkins University School of Medicine in 1994. The conference is held every two years rotating between the United States and an international venue.



PODIUM PRESENTATIONS

BASIC SCIENCE

Candelario J, Chaturvedi LS, Vyas D. Irreversible Proteasome inhibitor Carfilzomib modulate proliferation and apoptosis by down-regulating cyclinD1, CDKN1A/p21, c-Jun in MDA-MB-231 cells.

Ang A, Tan F, Macias K, James S, Sidh J, Lenhard JR. Carbapenem-Resistant *Acinetobacter baumannii* protects *Staphylococcus aureus* during β -lactam Exposure.

Patel AM, Woldemariam T, Sprenger S, Vyas D, Chaturvedi LS. Aqueous Leaf Extract of *Ocimum Sanctum* L (Tulsi) Enhances Inhibition of Proliferation of Human Triple-negative Breast Cancer MDA-MB-231 Cells.

CLINICAL RESEARCH

Singh S, Shelton T, Robinson EB, Nardo L, Escobedo E, Jackson L, Kreulen C. The Influence of Percentile Weight-Bearing on Foot Radiographs.

Saadat M, Arquette J, Chung HJ, Mostamand M, Lee SY. Improving Heart Failure Outcomes, a Team-Based Approach.

Bahri G, Druar N, Vyas D, Saadat M, Seraj S. Necrotizing fasciitis health coverage: Does insurance status affect the severity of the disease as measured by cost and length of stay?

EDUCATION / INNOVATION

Vosoughi E, Jung SM, Parikh K, Seraj S. The Economic Benefits of Early Palliative Care Consultation on Length-of-Stay and Cost-of-Care in a Safety-Net Hospital.

Tan T, Kennedy F, Lewis A, To M, Mashayekhi K. Utilizing a Checklist as a Tool for Safe Implementation of Percutaneous Tracheostomy in the setting of a Community based Surgical Residency Training Hospital.

Ha J, Arquette J. Comparison of an ICU-specific and Hospital-wide Antibigram.

RESEARCH ABSTRACT

CALIFORNIA NORTHSTATE UNIVERSITY

1. Ang A, Tan F, Macias K, James S, Sidh J, Lenhard JR.

Carbapenem-Resistant *Acinetobacter baumannii* protects *Staphylococcus aureus* during β -lactam Exposure

Introduction: *Staphylococcus aureus* and *Acinetobacter baumannii* are commonly responsible for life-threatening infections and may be co-cultured together clinically. The objective of the current study was to determine if *A. baumannii* are capable of protecting methicillin-susceptible *S. aureus* (MSSA) during β -lactam exposure.

Methods: The MSSA isolate ATCC 25923 was utilized for monoculture time-killing experiments. The same isolate was also used in polymicrobial experiments in which MSSA was co-cultured with either the *A. baumannii* isolate ATCC 19606 (chromosomal OXA-51 producer) or the clinical *A. baumannii* isolate 03-149-1 (chromosomal OXA-51 and plasmid-mediated OXA-23 producer). Time-killing studies were conducted over 24 hours at a 10^6 CFU/ml inoculum to assess the killing of meropenem at concentrations of 0.063, 0.25, 1, 4, 16, and 64 mg/L. The pharmacodynamics of meropenem were quantified using a Hill-type mathematical model that described the areas under the MSSA colony-forming unit (CFU) curves.

Results: Meropenem concentrations ≥ 16 mg/L eradicated the MSSA by 24 hours during monoculture and co-culture with ATCC 19606. During co-culture with 03-149-1, the highest meropenem concentration of 64 mg/L was only capable of achieving a 3.6 log reduction of the MSSA. In the Hill-type analysis, the maximal killing of the MSSA was significantly lower during co-culture with 03-149-1 (E_{\max} 2.81, 95% CI 2.38 – 3.23) than ATCC 19606 (E_{\max} 3.51, 95% CI 3.28 – 3.75).

Conclusion: *A. baumannii* that produce a plasmid-mediated oxacillinase attenuated the killing of *S. aureus* during exposure to meropenem. These results have implications for the selection of antistaphylococcal agents during polymicrobial infections.

RESEARCH ABSTRACT

CALIFORNIA NORTHSTATE UNIVERSITY

2. Candelario J, Chaturvedi LS, Vyas D.

Irreversible Proteasome inhibitor Carfilzomib modulate proliferation and apoptosis by down-regulating cyclinD1, CDKN1A/p21, c-Jun in MDA-MB-231 cells.

Introduction: Triple-negative cancer continues to challenge physicians with poor outcome. We are pioneer in reporting the potential role of irreversible proteasome inhibitor and this study investigates the molecular mechanism. Carfilzomib (CFZ), a selective irreversible proteasome inhibitor being used for treatment of relapsed and refractory multiple myeloma. Herein, its antiproliferative and apoptotic effects and molecular targets were investigated on human triple-negative breast cancer (TNBC) MDA-MB-231 cancer cells.

Methods: MDA-MB-231 cells were treated with various concentrations of CFZ, doxorubicin (DOX) or in a combination of both. Cell viability and toxicity were assessed using cell counting kit-8 and apoptosis with PI/Annexin V-FITC detection kit and flow cytometry was used to analyze the cell-cycle distribution. The expression of Cyclins, cyclin-dependent kinase inhibitor CDKN1A/p21, c-Jun transcription factor and the phosphorylation of histone gamma-H2AX (p-Ser-139) were detected using specific antibodies by immunoblot analysis.

Results: CFZ inhibited proliferation, induced cell-cycle alterations and enhanced apoptosis in a time and dose-dependent manner. Its action was compared to DOX, a first line chemotherapeutic drug and CFZ was found to be more potent than DOX. In fact, a combination of CFZ and DOX significantly enhanced both early and late apoptosis in comparison to either drug alone. Furthermore, CFZ inhibited cyclin-D1, p21, and c-Jun transcription factor and enhanced phosphorylation of histone gamma-H2AX (p-Ser-139).

Conclusion: Our data suggest, CFZ induces apoptosis and inhibit proliferation by down-regulating cell-cycle proteins, cyclin-dependent kinase inhibitor, c-Jun and enhancing H2AX phosphorylation in TNBC-MDA-MB-231 cells. These findings further convince us of a potential use of CFZ against TNBC tumors harboring drug-resistant phenotype.

RESEARCH ABSTRACT

CALIFORNIA NORTHSTATE UNIVERSITY

3. DiSibio G, Shim K, Hui K, Doctor J, Al-Khayat T, Baranov C, Puglisi J.

Integrating Electronic Medical Record Training into the Undergraduate Medical Curriculum

Introduction: Since its inception in the mid 1960's, the Electronic Medical Record (EMR) has emerged as a critical technology in patient care. However, few references can be found that assess approaches to or outcomes of approaches to prepare medical personnel to use this technology.

Methods: After assessing prior preparation for and interest in EMR use from our 2nd-year medical students and expectations for this training by their preceptors through anonymous surveys, we began developing an EMR platform "sandbox" whose functionality is similar to those of popular systems (Epic, Cerner, etc.). We are progressively integrating this platform into our "Medical Skills" curriculum for 2nd-year undergraduate medical students.

Results: Survey results indicated a general lack of but desire for EMR preparation by 2nd-year medical students; concurrently, an interest in preclerkship EMR preparation for these students, particularly in chart review/summarizing critical information for patient encounters, was expressed by their preceptors.

Conclusion: The majority of our preceptors anticipate allowing full use of the EMR for their rotating students in patient care. While most of our medical students appreciate the value of the EMR in patient care, they feel uncertain in their preparation to use this technology. The 2nd year of undergraduate medical education may provide an optimal window to provide such preparation.

RESEARCH ABSTRACT

CALIFORNIA NORTHSTATE UNIVERSITY

4. Fitzpatrick LR, Small J, O'Connell R, Zapf J.

A Novel ROR- γ T Inhibitor (VPR-254) Attenuates Key Parameters of Colitis in Two Murine Models of Inflammatory Bowel Disease

Introduction: Retinoic Acid Related Orphan Nuclear Receptor gamma T (ROR γ T) is a specific transcription factor for IL-17 expressing cells, which may contribute to Inflammatory Bowel Disease (IBD). The goal of our study was to determine if VPR-254 (a small molecule inhibitor of ROR γ T) attenuates colitis in two distinct murine IBD models.

Methods: Trinitrobenzene sulfonic acid [TNBS] (20 mg/kg in 50% ethanol) was given by the intracolonic route to induce colitis. For TNBS studies, female BALB/c mice were divided into 6 groups, including ip VPR-254 treatment. On study day 6, colons were collected for determining macroscopic colonic scores, colonic cytokines (IL-23 and IL-17) and colonic histopathology. Female SCID mice were injected by the ip route with 12 mg/kg of anti-CD40 monoclonal antibody to induce innate colitis. Mice were treated (days 0–7) with vehicle and VPR-254 (by oral administration). From study day 7, evaluations included colon weight measurements, colonic histology and intestinal cytokines.

Results: VPR-254 dose dependently improved the macroscopic colonic score for TNBS colitis. Compared to vehicle/TNBS controls, colonic histopathology was significantly reduced (by 51%) in mice treated with VPR-254 (25 mg/kg). Colonic cytokine levels were returned to those seen in non-TNBS treated mice by treatment with VPR-254. With the innate colitis model, colonic histology scores were: 2.6 ± 0.2 (no treatment), 9.0 ± 0.5 (vehicle) and 6.2 ± 0.4 (VPR-254 [50 mg/kg bid], $p < 0.05$ vs. vehicle treatment). Colonic IL-17 and GM-CSF were significantly reduced in mice treated with VPR-254.

Conclusion: VPR-254 improved relevant colitis parameters associated with two diverse murine models of IBD.

RESEARCH ABSTRACT

CALIFORNIA NORTHSTATE UNIVERSITY

5. Patel AM, Woldemariam T, Sprenger S, Vyas D, Chaturvedi LS.

Aqueous Leaf Extract of *Ocimum Sanctum* L (Tulsi) Enhances Inhibition of Proliferation of Human Triple-negative Breast Cancer MDA-MB-231 Cells.

Introduction: Triple-negative breast cancer (TNBC) is a heterogeneous subclass of breast cancer does not express hormone receptor (ER and PR) and epidermal growth receptor (HER-2). Aqueous extracts of *O. Sanctum* leaves (AEOSL) have been shown anticancerous in other types of cancers but has not yet been investigated in human TNBC. The aim of this study was to investigate the anti-proliferative effect of AEOSL on human TNBC-MDA-MB-231 cells.

Methods: AEOSL was prepared by following standard laboratory procedures. The resultant bioactive extract was dissolved in sterile water. Human TNBC-MDA-MB-231 cell-line was cultured in DMEM with 10% fetal bovine serum. Cells were treated with various concentrations of *O. sanctum* (0-500 μ g/mL) extracts. In parallel, cells were also treated with doxorubicin (DOX, 0-500nM) or in a combination of both. Cell viability and proliferation was measured at various time-points using cell counting kit.

Results: The AEOSL exhibited significant cytotoxic effect against human TNBC MDA-MB-231 cells in a time and dose dependent manner with IC₅₀ (300g/mL) that found to be comparable to the IC₅₀ value of doxorubicin (300nM), a chemotherapeutic agent used as first-line therapy in TNBC. Furthermore, we are identifying the pure bioactive compounds from extract of *O. sanctum* leaves and its antiproliferative molecular targets in the modulation of growth inhibition of human TNBC- MDA-MB-231 cells.

Conclusion: This study for the first time reports that AEOSL have potential as anti-cancer by inhibiting growth of TNBC-MDA-MB-231 cells. Thus, our data suggest that *O. sanctum* bioactive compounds may be used in TNBC patients alone or in a combination with therapeutic drugs.

RESEARCH ABSTRACT

CALIFORNIA NORTHSTATE UNIVERSITY

6. Sprenger S, Lam H, Woldemariam T, Vyas D, Chaturvedi LS.

A Novel Serum-Free Differentiation of Pre-adipocyte 3T3-L1 and ST2 Cell Lines into mature Adipocytes

Introduction: The excessive triglyceride accumulation in adipose tissue caused Obesity. The most commonly employed adipocyte model involves differentiation of preadipocytes using a hormonal induction medium supplemented with FBS. In the current study we developed a novel serum-free model for adipocyte differentiation with BSA and growth factors supplemented with various concentration of fatty acids for free fatty acid (FFA) uptake in 3T3-L1 and ST2 fibroblast cells.

Methods: NIH-3T3-L1 and ST2 preadipocyte cells were maintained in DMEM containing 10% fetal calf serum and 1% penicillin-streptomycin and RPMI with 10% FBS and 1% penicillin-streptomycin mixture respectively at 37°C, 5% CO₂ in a humidified atmosphere. Differentiation was induced using a mixture of Dexamethasone-0.25 µM, 3-isobutyl-1-methylxanthine (IBMX-0.5 mM), Insulin-10 µg/mL or Insulin-Transferrin-Selenium (ITS 1%). Cells were cultured in media containing DMEM with bovine serum albumin (BSA-2.5%) and Lipid mixture 1 (LM1-1%). Total RNA was extracted and quantitative-RT-PCR performed using *delta-delta Ct method*, also known as the $2^{-\Delta\Delta C_t}$ *method*. Ribosomal protein P0 (RPLP0) was used as house-keeping gene for quantitation of relative expressions.

Results: We observed an increased fatty acid accumulation relative to controls using Oil Red O neutral lipid staining and spectrophotometry. Differentiation was further confirmed by increased gene-expression of adipogenic transcription factor peroxisome proliferator-activated receptor gamma (PPAR), and CCAAT/enhancer binding protein alpha (C/EBP), and adipogenic genes fatty acid binding protein 4 (FABP4/aP2), fatty acid translocase (FAT/CD36) and lipogenic gene Peripilin by using quantitative-RT-PCR.

Conclusion: Our data suggest that serum-free differentiation can lead to fat accumulation and adipogenic gene expression in both NIH-3T3-L1 and ST2 pre-adipocytes.

RESEARCH ABSTRACT

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

7. Bahri G, Druar N, Vyas D, Saadat M, Seraj S.

Necrotizing fasciitis health coverage: Does insurance status affect the severity of the disease as measured by cost and length of stay?

Introduction: Necrotizing fasciitis is a rare but serious infection with a high mortality. Insurance status has been shown in multiple clinical situations to affect care and outcome of patients. No studies to date have analyzed if insurance status has any effect on duration stay in patients with necrotizing fasciitis.

Methods: A retrospective chart review of patients presenting to a community hospital was undertaken. Diagnosis codes were used to identify patients with necrotizing fasciitis. Patients were grouped by primary insurance status as self-pay, Medi-Cal/Medicare, HPSJ and private insurance/other. Length of stay was determined by admission date and discharge date in hospital medical record. Stata software was used for statistical analysis.

Results: 47 patients were included in the study. This was a preliminary analysis of uncompleted data. Patients were excluded if duration of stay or insurance status could not be identified. A one-way between subjects ANOVA was conducted to compare the effect of health insurance on length of stay. There was not a statistically significant effect for insurance status [$F(3,41) = 0.09$, $p = 0.96$].

Conclusion: Necrotizing fasciitis is a severe disease and presentation can have a major affect on patient outcome. Our preliminary analysis shows that health insurance status does not necessarily affect duration of care received by patients. This study could suggest that the presentation and severity of disease in all patients is similar. Therefore, regardless of insurance status, education on necrotizing fasciitis would benefit all.

RESEARCH ABSTRACT

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

8. Saadat M, Arquette J, Chung HJ, Mostamand M, Lee SY.

Improving Heart Failure Outcomes, a Team-Based Approach

Introduction: In 2017 SJGH moved its HF clinic into the primary care clinic and changed the format of the clinic to a multidisciplinary clinic. The purpose of this study was to assess the impact of the new clinic format on a patient's health care utilization before and after their first clinic visit.

Methods: Patients with at least one visit to the clinic between August 1, 2017 and July 31, 2018 were included. The primary endpoints of the study were a comparison of ED visits, hospital admissions, and hospital length of stay (LOS) before and after a patient's first visit to the HF clinic. The Wilcoxon signed ranks test was used to analyze the primary endpoints.

Results: A total of 115 patients were seen in the new HF clinic during the study period. Patients with at least one visit to the HF clinic saw a trend towards reduced ED visits (58 vs. 38, $p=0.122$), a 67% reduction in hospital admissions (75 vs. 25, $p < 0.0001$), and a 68% reduction in average LOS (3.2 days vs. 1 day, $p < 0.0001$) after their first visit to the HF clinic.

Conclusion: A multidisciplinary HF management program embedded in a primary care clinic can be highly effective in reducing HF related ED visits and hospital admissions. The HF clinic saw only a small fraction of the patients who utilize the ED or are admitted to the hospital for HF-related diagnoses. SJGH hopes to expand HF clinic operations in the near future in order to serve more patients.



RESEARCH ABSTRACT

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

9. Vosoughi E, Jung SM, Parikh K, Seraj S.

The Economic Benefits of Early Palliative Care Consultation on Length-of-Stay and Cost-of-Care in a Safety-Net Hospital.

Introduction: Published researches have shown that early in-patient palliative care consultation reduced length-of-stay and cost-of-care by up to 50% and 33% respectively. We formed a multidisciplinary palliative care team in 2015 to promote early palliative care consultation. We conducted a retrospective study to evaluate length-of-stay and cost-of-care of our patients who received early palliative care.

Methods: In 2016, a screening process by the hospital discharge planners on day of admission for potential early palliative care consultation was initiated. Using a retrospective chart review, a total 570 patients who received in-patient palliative care consultation were reviewed between January 2016 to June 2018. 287 patients were seen by the palliative care team within 2 days of admission and 283 patients were seen after the second day of admission. Data on length-of-stay and total charges per admission were collected for both groups.

Results: In the early consult group, both length-of-stay and cost-of-care in total charges per admission decreased by 64% ($p<0.0001$) and 58% ($p<0.0001$), respectively. The results showed greater reduction than published research results.

Conclusion: Our results showed greater reductions in both length of stay and cost of care. This suggests the importance of multidisciplinary approach in addressing goals of care early and its potential benefit in public hospitals.

RESEARCH ABSTRACT

PHARMACY SAN JOAQUIN GENERAL HOSPITAL

10. Ha J, Arquette J.

Comparison of an ICU-specific and Hospital-wide Antibigram

Introduction: In patients with a presumed infection, empiric antibiotic therapy is based on patient- and institution-specific factors, including a hospital-wide antibiogram based on local bacterial susceptibility. Many factors contribute to multi-drug resistant (MDR) organisms in the ICU. Developing an ICU-specific antibiogram will compare bacterial prevalence and antibiotic susceptibility in the ICU versus hospital-wide.

Methods: An ICU-specific antibiogram was compiled using data from 145 patients admitted to the ICU in 2017 and compared to the hospital-wide antibiogram in the same period. The primary endpoint was differences in prevalence and susceptibility in the 461 bacterial isolates collected during ICU stay, compared to the general hospital antibiogram. Secondary endpoints included time to appropriate therapy, time of culture collection, MDR status of isolates, and length of both ICU and hospital stay.

Results: No differences were seen in the gram positive cocci portion of the antibiograms. Among gram negative rods seen in ICU, *E. coli* showed decreased sensitivity to cephalosporins and fluoroquinolones, *E. cloacae* showed decreased sensitivity to cefepime and carbapenems, and *P. aeruginosa* showed decreased sensitivity to ceftazidime. Time to appropriate antibiotic therapy was 0.87 days. Time to culture collection was 5.7 days from hospital admission and 4.4 days from ICU admission. Twelve MDR bacterial isolates were noted. Length of stay was 19.7 days and length of ICU stay was 14.8 days.

Conclusion: Current empiric antibiotic therapy appears appropriate. Constant evaluation of trends in multidrug resistance and antibiotic consumption patterns are essential.



RESEARCH ABSTRACT

PHARMACY SAN JOAQUIN GENERAL HOSPITAL

11. Padilla R. Kim K, Chung H.

Identification of Risk Factors for Multidrug-Resistant Organisms

Introduction: The CDC recommends monitoring institution-specific MDRO trends to quantify risk factors for development at each facility. The objectives were to determine the incidence of MDRO infections in the adult inpatient population at SJGH and to identify risk factors for their development.

Methods: A total of 200 MDRO isolates from January 2015 to December 2018 were selected for review, 25 Gram-positive and 25 Gram-negative isolates from each year. The primary endpoint was the prevalence of MDROs from 2015 to 2018. The secondary endpoints were the prevalence of risk factors and infection burden. Patients age 18 or older who grew an MDRO were included. Patients under the age of 18 or whose cultures were drawn while not admitted as inpatients were excluded.

Results: The incidence of MDRO isolates per 100 patient admissions was similar between all 4 years (2.63-2.77%). The risk factor of highest prevalence for MDRO infection was recent surgery (66.0%) and lowest was history of cancer (8.5%). There were 5 deaths in the Gram-positive group and 12 deaths in the Gram-negative group. The average length of stay was longer for Gram-negative infection (17.9 versus 13.7 days).

Conclusion: The incidence of MDRO infection was similar from 2015 to 2018. There was a trend towards higher mortality and longer length of stay in patients with Gram-negative MDRO infections. Recent surgery, prior antibiotic exposure, and presence of a urinary catheter were identified as the top risk factors associated with MDRO infection.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

12. Candelario, J, Kennedy F.

Implementing the SAS combined with ASA-PS classification to predict postoperative outcomes in trauma patients.

Introduction: Surgery in trauma patients can be associated with high postoperative morbidity, mortality and premature death. The outcomes can be explained by poor preoperative condition and comorbidities of the patients, stressors, patients condition, and the postoperative development of major complications. There is no easy and effective way to predict and measure risk of poor postoperative outcomes. Without measurements it is difficult to identify patients at high risk for morbidity and mortality after surgical procedures in the trauma setting.

Methods: We will attempt to apply the surgical Apgar score combined with American Society of Anesthesiologist physical status collectively known as SASA into a single adjusted scale, reported to have a high 30-day morbidity and mortality prediction, to a community trauma center.

Results: Using data generated from San Joaquin General Hospital and NSQIP we will expect to validate this tool in a trauma setting. Increased severity of the sAs, ASA-PS and SASA is expected to be correlated with significantly higher mortality.

Conclusion: Higher predictive ability will be demonstrated in trauma by the SASA through combination of simple and effective scoring systems. Reliable measurements could lead to changes in management, thereby improving the outcomes and effectiveness of surgical intervention in the trauma setting. This could be a valuable tool for objective risk stratification after trauma surgery to enable higher risk patients to receive appropriate management during and after the hospital stay.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

13. Sharma N, White CK, Kurjatko A, Mikael A, Matolo N, Vyas D.

The Affordable Care Act: Access to and Quality of Care for Surgical Conditions Such As Acute Appendicitis.

Introduction: The Affordable Care Act (ACA) was signed into law on March 10, 2010. In this study, patients presenting with acute appendicitis to San Joaquin General Hospital, an academic safety net hospital in North California, were evaluated to understand the impact the ACA has had on healthcare access and patient outcomes. We hypothesize that increased access to health insurance itself has not significantly altered proportion of patients seeking care in the early stages of acute appendicitis, nor their outcomes.

Methods: We conducted a retrospective chart review of 1,724 patients who presented between 06/20/2010 and 11/17/2016 with ICD codes indicating a diagnosis of acute appendicitis. Patients were placed into “pre-“ and “post-ACA” groups based on an ACA implementation date of 12/01/2013. Data collected on each patient included age, gender, duration of symptoms, comorbidities, intervention, pathology results, and insurance status.

Results: Of 1,724 total patients, 689 met our inclusion criteria. In the post-ACA group, the duration of symptoms prior to presentation was 2.2 days as compared to 2.5 days pre-ACA. The average length of stay was 3.2 days post-ACA as compared to 3.3 days pre-ACA.

Conclusion: At this time, our data is still in it’s preliminary stages of analysis. However, there was neither a significant difference in the duration of symptoms prior to presentation nor in the length of stay for patient pre- and post-ACA.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

14. Sharma N, Leong J, Foroutan S.

Does Computer Tomography of the brain change management of trauma patients with Ground Level Fall and baseline of Dementia or GCS of 14?

Introduction: Unnecessary head computed tomography (CT) performed for evaluation of adults with suspected mild traumatic brain injury (TBI) is a growing concern. Current guidelines recommend routine head CT for those with a pre-trauma baseline Glasgow Coma Scale (GCS) of less than 15 presenting for trauma evaluation. The aim of this study is to investigate the need for head CT following minor head trauma, particularly ground level falls (GLF), in patients with baseline mental status deficits.

Methods: Using the San Joaquin General Hospital's Trauma Registry, we performed a retrospective chart review of patients presenting after a GLF with a pre-fall baseline GCS of 14. Exclusionary criteria included any change in baseline neurological status according to family or staff at assisted living facilities. We evaluated the initial head CT findings, neurosurgical consultation, and requirement for operative management.

Results: Our cohort consisted of 314 eligible patients between the ages of 60 and 103. We found that 91.4% received a CT head, 8.6% had acute intracranial hemorrhage, and only 1.3% required operative management, 75% of whom had documented alterations in baseline GCS.

Conclusion: Upwards of 90% of patients in our study presenting after a GLF receive head CTs. With only 1.3% requiring surgical intervention, a vast majority of these scans are performed without significant impact on clinical outcomes. In order to better utilize valuable healthcare resources, it would be prudent to create an algorithm regarding indications to perform CT scans of the head for patients with baseline GCS of 14 presenting for trauma evaluation.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

15. Singh S, Nathe C, Lian E, Lu J, Shieh A, Haudenschild D, Giza E, Kreulen C.

Effects of Micronized Cartilage Matrix on Cartilage Repair in Osteochondral Lesions of the Talus

Introduction: The repair of osteochondral lesions remains a challenge due to its poor vascularity and limited healing potential. Micronized cartilage matrix (MCM) is dehydrated, decellularized, micronized allogeneic cartilage matrix that contains the components of native articular tissue and is hypothesized to serve as a scaffold for the formation of hyaline-like tissue. Our objective was to demonstrate in vitro that the use of MCM combined with mesenchymal stem cells (MSCs) can lead to the formation of hyaline-like cartilage tissue in a single-stage treatment model.

Methods: In group 1 (no wash), 250 μ L MCM was reconstituted in 150 μ L Dulbecco's phosphate-buffered saline (DPBS) for 5 minutes. Group 2 (saline wash) included 250 μ L MCM washed in 20 mL DPBS for 30 minutes, then aspirated to remove all DPBS and reconstituted in 150 μ L DPBS. Group 3 (serum wash): 250 μ L MCM washed in 20 mL DPBS for 30 minutes, then aspirated and reconstituted in 150 μ L fetal bovine serum. Each group was then added to 50 μ L solution of MSC suspended in DPBS at a concentration of 1.2×10^6 cells/350 μ L. After 3 weeks, the defects were extracted and sectioned to perform viability and histologic analyses.

Results: Stem cells without rehydration of the MCM showed almost no viability whereas near complete cell viability was seen after rehydration with serum or saline solution, ultimately leading to chondrogenic differentiation and adhesion to the MCM particles.

Conclusion: We have shown in this proof-of-concept in vitro study that MCM can serve as a scaffold for the growth of cartilage tissue for the treatment of osteochondral lesions.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

16. Singh S, Shelton T, Robinson EB, Nardo L, Escobedo E, Jackson L, Kreulen C.

The Influence of Percentile Weight Bearing on Foot Radiographs.

Introduction: Clinical decisions are often made on weight-bearing radiographs. However, it is unknown whether various weight-bearing conditions alter specific radiographic measurements. The purpose of this study was to determine whether percentage weight-bearing influences radiographic measurements of the normal foot.

Methods: A prospective study with 20 healthy individuals had radiographs of the foot under 5 weight-bearing conditions (non-weight-bearing, 10% body weight, 25% body weight, 50% body weight, and 100% body weight). Measurements were made of hallux valgus angle (HVA), 1-2 intermetatarsal angle (IMA), talonavicular coverage angle (TNCA), talocalcaneal angle (TCA), forefoot width, LisFranc distance, cuboid height to ground (CHG), and talo-first metatarsal angle (TMA) of each weight-bearing condition. Statistical differences of each measurement for each weight-bearing condition were determined.

Results: The TNCA and TCA increased significantly, whereas the CHG decreased significantly with increased percentage body weight. There were no differences in HVA, IMA, forefoot width, LisFranc distance, and TMA with increased percentage body weight.

Conclusion: This study shows an increase in TNCA and TCA, and decrease in CHG, demonstrating a flattening of the medial arch, increasing hindfoot valgus, and midfoot external rotation and abduction with increasing percentage body weight applied to a foot. Percentage weight-bearing does not change radiographs in the foot between 25% and 100% weight-bearing. The clinical relevance of this finding is that graduated postinjury or postoperative weight-bearing regimens may only be relevant if the patient is either less than or greater than 25% of body weight on their extremity.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

17. Tan Y, Kennedy F, Lewis A, To M, Mashayekhi K.

Utilizing a Checklist as a Tool for Safe Implementation of Percutaneous Tracheostomy in the setting of a Community based Surgical Residency Training Hospital.

Introduction: Percutaneous tracheostomy is a common procedure performed in the ICU for patients requiring prolonged ventilator support. While indications for the procedure are universal, smaller facilities with less volume or experience may not have fully implemented percutaneous tracheostomy into their practice. To our knowledge, we are the first to document the implementation and transition of open to percutaneous tracheostomy in the setting of a small community hospital residency-training program.

Methods: The focal point for this surgical quality improvement initiative for our ACS/COT Verified Level 3 Trauma center was a checklist to be completed prior to initiation of percutaneous tracheostomy. This included various requirements, including two separate trained trauma surgeons to perform or supervise the tracheostomy and bronchoscopy, trained personnel be in attendance at all times including an ICU RN and a respiratory therapist, and equipment and precautions be available and checked.

Results: To date, 57 open tracheostomies and 50 percutaneous tracheostomies have been performed by the trauma service since its implementation in March 2017. There were no significant periprocedural complications. One case did require further surgical intervention months later of tracheal resection secondary to tracheal stenosis that was not at the site of the percutaneous tracheostomy.

Conclusion: Our research documents the measures taken to safely implement percutaneous tracheostomy in a surgery residency training program. We believe that this has contributed to quality improvement in our trauma center. We provide a formula for other facilities interested in transitioning to this modality to improve surgical care.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

18. Yun J, Lung K, Vyas D

High Prevalence of Diverticular Disease in Low-Prevalence Ethnicity from Integration of Different Dietary Habits

Introduction: Diverticular disease (DD) has traditionally been thought to be more prevalent in western societies, commonly associated with westernized diets particularly low in fiber. Increasing immigration trends suggest that trends once seen in DD is changing. Due to cultural integration, north California is uniquely positioned to represent multiple ethnicities.

The purpose of this study is to understand the prevalence of DD among San Joaquin General Hospital patient who live in a multi-ethnic community. This is first study to our knowledge investigating diet, ethnicity, age in a controlled setting and subsequent epigenetic changes.

Methods: This is a retrospective study. A chart review was performed to identify age, gender, ethnicity to understand the prevalence of diverticular which was confirmed by CT or colonoscopy.

Results: We reviewed a total of 4300 charts and based on exclusion criteria, was able to include a total of 2822. A confirmed diverticular disease was seen in 10%, n=280. When looking at patients who had DD, median age was 60.4 years old (40- 94), and mode was 54 years old. There was increased prevalence among male (52%, n=147) compared to female (47% n=133). The most common ethnic group was White (35%, n=99), followed by Hispanic (32%, n=90), Black (14%, n=40), and Asian (9%, n=27).

Conclusion: Prevalence of diverticular disease with ethnicity is changing. There is increased incidence in more diverse group of ethnic background and also effecting younger patients than previously seen.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

19. Yun J, Berera D, Vyas D.

Younger Trainees at Risk of Sharps Injury and Under Reporting

Introduction: A majority of sharps injuries are not reported. Studies have quantified the underreporting incidence but these are often small, and limited to specific subsets. The objective was to quantify the incidence of sharps injuries, reporting behaviors, and reasons for not reporting across all medical fields and training levels.

Methods: Online anonymous survey was distributed via e-mail to attending, residents and fellows, medical students and nurses across the U.S.

Results: A total of 460 responded to the survey. Medical students had lowest incidence of sharps injury (32%, n=30) while experiencing the second highest number of absolute injuries in last one year (0.87 ± 0.68). They were the least likely to report their injuries (40%, n= 12). Among the junior residents, there was a steady increase in incidence and absolute number of injuries experienced in last one year especially during the first three years of residency (PGY1 46%, 0.67 ± 0.81 n= 71, PGY2 63%, 0.86 ± 0.82 , n= 46, PGY3 32%, 0.92 ± 0.81 n=45). The medical field with the highest incidence of reporting was nursing (71% n=31). Three most common reasons for not reporting an injury were: (1) the HCP perceived minimal risk based on the patient's medical history (2) worried about looking incompetent to peers, and (3) a feeling that sharps reporting offered no benefit.

Conclusion: Younger trainees are at an increased risk for sharps injury, and have lowest reporting rates. New strategies are needed to address any misconceptions about injury and to highlight the importance of reporting.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

20. Kennedy F, Foroutan S, Ginwalla R, Meade P, Rodgers A.

Would Median Sternotomy Be Better? A Detailed Analysis of Injuries Sustained in Patients Undergoing Emergency Department Thoracotomy for Torso Gunshot Wounds.

Introduction: Patients undergoing emergency room thoracotomy (ERT) for torso gunshot wounds have an extremely high mortality. The recommended initial incision has been a lateral thoracotomy (LT). Whether this is the most efficacious approach has not been questioned. Median sternotomy (MS) is used to access the heart and other thoracic structures in non-ERT circumstances. This study was undertaken to determine whether injuries sustained in ERT patients would be those better approached by median sternotomy rather than lateral thoracotomy.

Methods: All patients undergoing ERT for torso gunshot wounds since San Joaquin General Hospital's trauma service initiation from late 2013 until the present were reviewed. Medical records and autopsies were collected and reviewed.

Results: 44 patients meeting the above criteria were included. Initial incision was LT in 38 and median sternotomy in 5. In 8 cases, fatal injuries were both found in the thorax and abdomen. In 6 cases, there were fatal injuries in the thorax but abdominal injuries were unknown. 43% had cardiac injuries and 89% had injuries to the right atrium and/or right ventricle. 36% had fatal right chest cavity injuries, 14 of whom had an initial left LT. 36% of those 14 patients never had the right chest cavity opened.

Conclusion: MS may afford faster and improved access, visualization, control and repair of these injuries with less iatrogenic blood loss as well as decreased occupational health risk than LT. MS should be given consideration as the initial incision in certain circumstances.

RESEARCH ABSTRACT

SURGERY SAN JOAQUIN GENERAL HOSPITAL

21. Gholami S, Mashayekhi K, Lee SY, Goh B KP, Chan CY, Nuno M, Gonen M, Balachandran V, Allen P, Drebin J, Jarnagin W, D'Angelica M, Kingham T.

Is Minimally-Invasive Surgery of Lesions in the Right Superior Segments of the Liver Justified? A Multi-Institutional Study of 235 Patients.

Introduction: Many surgeons consider minimally invasive (MIS) resection of liver lesions in segments 7 and 8 technically challenging due to their deep location, and therefore not amenable and safe using a pure MIS approach. In this report, we compare outcomes of MIS parenchymal sparing liver resections of lesions in segment 7 and 8 to those of open at 2 high-volume centers.

Methods: Patients who underwent MIS or open resections of lesions in segment 7 or 8 from 2003-2016 were identified from prospective databases at 2 institutions (MSKCC and Singapore General Hospital). Univariate and multivariable analysis with logistic regression was conducted to compare outcomes between MIS and Open cohorts.

Results: Two-hundred and thirty-five patients (MSKCC n=106; Singapore n=129) underwent resection of liver lesions (benign n= 20 (8.5%), HCC/cholangiocarcinoma n= 95 (40.4%), metastatic n= 120 (51.1%)) in segments 7 and 8 using an open (n=172) and MIS (n=63) approach with a median age of 60 for the entire cohort. No significant differences in age, BMI, and gender were observed between the groups. Operative time was longer in the MIS group (median 220 min) compared to open (median 170 min, $p=0.0083$). Patients in the MIS group had significantly lower blood loss than their open counterparts (200 mL vs 300 mL; $p=0.0051$). Average hospital stay length was 3 days shorter for MIS patients (4 days vs 7 days; $p<0.0001$). There was no difference in the pringle time (MIS (0 minute) vs open (19 minutes)), the rate of post-operative complications (MIS (11.1%) vs open (15.1%), $p=0.4337$), and R0 resection (MIS (87.3%) vs open (89.3%), $p=0.5093$) observed between the 2 groups. On multivariate analysis, operative time, blood loss, and length of stay remained significantly different between the groups.

Conclusion: Although technically challenging, parenchymal sparing MIS resection of segment 7 or 8 is safe with similar R0 resection and complication rates. In this group of selected patients who were resected by a group of experienced MIS HPB surgeons; statistically significant less blood loss, and shorter length of stay was observed for MIS compared to open resections.

CLINICAL VIGNETTE

CALIFORNIA NORTHSTATE UNIVERSITY

22. Cohen H, Chinn M, Senegor M.

Primary Intraosseous Meningioma

Introduction: Meningiomas are common benign tumors that arise from dura mater. Primary intraosseous origin is extremely rare, only 1% of all meningiomas. There is a scant literature of case reports or series on primary intraosseous meningiomas.

Case Description: A 69 year old female presented with an incidentally discovered osteolytic lesion in the right frontal skull while undergoing a work-up for dizziness. It measured 25 x 17mm. On examination there was no palpable mass or tenderness in the area. On CT the lesion was hypodense; on MRI, hypointense on T1 and T2 weighted images. The outer table of the skull was preserved.

The lesion was excised with a 3.5x4 cm margin. Intraoperative navigation was necessary to locate it. The underlying dura was adherent and came out with it. The final pathology was intraosseous meningioma. Subsequently the patient underwent cranioplasty. She recovered well.

Discussion: Primary intraosseous meningioma is a rare entity that should be considered in the differential diagnosis of bony lesions in the skull. It is typically osteolytic.

Sophisticated navigation is rarely needed in the excision of skull masses. In this case, the absence of any surface indication made it necessary. In retrospect the adhesion of the dura to the skull was not surprising since this is where the tumor originated before infiltrating the inner table and diploic space of the skull.

CLINICAL VIGNETTE

FAMILY MEDICINE SAN JOAQUIN GENERAL HOSPITAL

23. Moheyuddin A, Chiriboga J, Parsa E.

The Gray Zone and Anchoring Effect

Introduction: Primary mediastinal B cell lymphoma is a subtype of diffuse large B-cell lymphoma that is derived from the thymic B cell. It predominantly affects women in the third and fourth decades of life and accounts for up to 10% of cases of diffuse large B-cell lymphoma. Clinical molecular characteristics are distinct however closely resemble those of Nodular Sclerosing Hodgkin lymphoma. Due to its location, primarily arising from the mediastinum, its discovery is noted when a patient presents with symptoms of superior vena cava syndrome. It typically tends to stay confined to the mediastinum and if invading, does so to nearby structures.

Case Description: Our case presents an atypical finding which led to the diagnosis of B cell lymphoma. A 37 year old female presented to procedure clinic for removal of a scalp mass. Mass was presumed to be a lipoma and after excision lesion was sent for pathology, which confirmed the diagnosis. Patients post op course was complicated by returning mass, a hematoma at the incision site. Patient's initial encounter was anchored to a clinical diagnosing anchoring bias due to her prior visit.

Discussion: Anchoring bias occurs at many levels. We rely on intuition, recall similar examples and seek evidence that supports our first impressions, which bias our decisions. This case is interesting because even though most commonly DLBCL invades locally, our patient had extranodal invasion, "away from the primary site" that was discovered first.



CLINICAL VIGNETTE

FAMILY MEDICINE SAN JOAQUIN GENERAL HOSPITAL

24. Assibey R, Chiu J, Wunnava B, Brown-Berchtold L, Yep J.

“I Can Feel It in My Bones”, A Curious Case of Cocci

Introduction: Coccidioidomycosis is a fungal infection caused by inhalation fungus and/or spores. Most commonly present in the Southwestern Region. May be present as pulmonary or extrapulmonary manifestations, including disseminating involving bones, skin, CNS

Case Description: 29 YO M with no PMH presented to ED, with worsening hip pain and SOB. Patient quickly became hypoxic and required supplemental oxygen. CXR and CT scan showed diffuse bilateral infiltrates, and patient was started on antibiotics for suspected pneumonia. Patient continued to have hip pain, and obtained a CT abd/pelvis, which revealed lytic lesion in left iliac crest. Eventually went into respiratory failure and was intubated. Bone biopsy was performed of lytic lesion and confirmed cocci. He was started on fluconazole empirically until confirmed bone lesion, was switched to Amphotericin B. Did not improve after 2 weeks, so fluconazole was added in addition to amphotericin B. Patient subsequently showed improvement, extubated and discharged home after a few weeks.

Discussion: Disseminated Cocci is a rare diagnosis, but when it occurs in the bone, it is usually in sacrum or ileum. In the absence of clear source of infection, and findings of a pathological fracture, cocci must always be in the differential. There is a high prevalence in the San Joaquin Valley. When monotherapy fails, there is option for dual therapy.



CLINICAL VIGNETTE

FAMILY MEDICINE SAN JOAQUIN GENERAL HOSPITAL

25. Grace J, Brown-Berchtold L.

Case Presentation of Isolated Neonatal Anal Atresia

Introduction: Neonatal anal atresia is rare, affecting 1 of 5000 live births. It is commonly associated with VACTERL association or Trisomy 21, and is uncommon as an isolated finding. Early identification of this anomaly is essential, as is the appropriate surgical management in order to optimize the patient's functional prognosis.

Case Description: Here, we present the case of a newborn male whose prenatal course was complicated by intrauterine growth restriction. Anatomical survey was normal and serum integrated prenatal screening results were negative. The infant was born at San Joaquin General Hospital at 37 weeks gestation via scheduled primary cesarean delivery for breech presentation, with APGARs 5/7/9. On physical exam, the patient was found to have an imperforate anus. He was transferred to UCSF where the diagnosis of neonatal anal atresia was confirmed. Upon detailed investigation, no major physical or genetic anomalies were identified. He required diverting colostomy with mucous fistula formation for treatment, with plans for subsequent definitive anoplasty.

Discussion: This case adds to the current body of literature regarding isolated anal atresia diagnosed in the postpartum period. It also illustrates the continued difficulty of antenatal diagnosis of this anomaly, even in this technologically advanced age.

CLINICAL VIGNETTE

FAMILY MEDICINE SAN JOAQUIN GENERAL HOSPITAL

26. Orokunle S, Adeel M, Ayala-Larco A.

“Doc, Can’t You Understand What I’m Saying?”

Introduction: Amyotrophic Lateral Sclerosis is a rare neurodegenerative condition characterized by progressive muscular paralysis. It involves degeneration of motor neurons. Dysphagia is one of the main features of ALS which can lead to nutritional deficiency and aspiration pneumonia.

Case Description: A 64yo man who presented to the ED with worsening shortness of breath and inability to speak for the past 2 months. Patient also reported a feeling of something being “stuck” in the back of his throat as well as difficulty swallowing both liquids and solids. Severely cachectic deconditioned male with dysarthria

Decreased respiratory effort, fast shallow breathing with use of accessory muscles, supraclavicular retractions, decreased breath sounds on the right. Alert, able to write words, but unable to vocalize. Decreased lateral tongue strength, muscular fasciculations noted in the left medial thigh, lateral tongue and web spaces of digits

Patient had an extensive work-up done including CT head, MRI head/neck, esophagram, upper airway fiberoptic exam, EGD and bronchoscopy with no significant abnormalities found. Patient’s physical examination exhibited both upper/ lower motor deficits highly suggestive of ALS. UC Davis neurologist confirmed it and patient was started on Riluzole. Patient was discharged to SNF with a referral to the UCD ALS clinic.

Discussion: The most important take home point is that there are many disorders that can cause dysphagia. It is important that one looks at the patient’s entire clinic presentation and keep a broad differential diagnosis.



CLINICAL VIGNETTE

FAMILY MEDICINE SAN JOAQUIN GENERAL HOSPITAL

27. Orokunle S, Grace J.

Subacute Thyroiditis

Introduction: Subacute thyroiditis is characterized by neck pain, a tender diffuse goiter and a presentation that typically presents as hyperthyroidism followed by euthyroidism, hypothyroidism and ultimately restoration of normal thyroid function. Many patients have a history of an upper respiratory infection 2-8 weeks prior to the onset of thyroiditis. The patient may present with temperature elevation, tender thyroid, ventricular tachycardia and thyroid storm. The labs show low TSH and high freeT₄, elevated CRP and ESR.

Case description: 63yo Female who presented to the ED with a 3 wk history of fevers, chills and neck pain with associated dyspnea on exertion, generalized weakness and shivering. Patient also had fevers highest being 104 that was being controlled with Tylenol q6hrs ATC. Neck was tender to palpation on the right side of neck between the bifurcation of sternocleidomastoid.

On initial evaluation, patient was complaining of anterior neck pain and was persistently tachycardic to 120 along with a fever. SIRS/Sepsis was initiated. However, TSH was low while FT₃ and fT₄ were elevated. Patient was started on Prednisone, Propranolol, Ibuprofen and Protonix. TPO <1 and TSI was undetectable. Patient symptoms improved with normal heart and normal temperature. Patient was tapered off the prednisone and improved with the propranolol and NSAID.

Discussion: The most important take home point from this case is that there is a lot of symptoms that overlap between SIRS/Sepsis and subacute thyroiditis. Both are treated quit differently. It is important to keep a broad differential diagnosis.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

28. Ayala-Larco A, Yescas-Garibay K, Singh G.

Postpartum Eclampsia and Psychosis? A Common Presentation of a Rare Diagnosis.

Introduction: Anti NMDA-R encephalitis is a rare autoimmune disorder that has gained increased knowledge since first described a decade ago. Despite its higher prevalence in young females, this condition still remains under recognized.

Case Description: 21yo AA female with h/o marijuana use and family h/o seizure disorder, developed severe preeclampsia requiring induction of labor at 38 weeks gestation. Two weeks postpartum, she presented to the ED with generalized seizures and was admitted for postpartum eclampsia. She also had emotional lability and behavioral changes prompting treatment for postpartum psychosis. Antipsychotics were later discontinued as she developed limb and orofacial dyskinesias. Seizures recurred along with tachycardia, fever and hypothermia; granting workup for infectious causes, which ultimately resulted negative. MRI revealed hippocampal FLAIR hyperintensities, CSF had elevated oligoclonal bands and IgG index. A 24-hour EEG demonstrated extreme delta brush pattern; raising suspicion for autoimmune encephalitis. Pelvic US and MRI revealed a mass in the right ovary; pathology post-oophorectomy confirmed an ovarian teratoma. Serum and CSF anti NMDA-R Ab resulted positive with high titers. She was treated with IVIg, pulse dose steroids and Rituximab. During the course of hospitalization she had persistent autonomic instability, seizures and central apnea, depending on mechanical ventilation. She was discharged to a LTAC.

Discussion: The manifestation of this illness during the postpartum period makes its diagnosis challenging. Our patient's history and initial presentation, justified exclusion of other conditions prior to recognizing the neuropsychiatric features and course of illness that are pathognomonic of this entity, and which were all present in our patient.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

29. Bahri G, Jung SM.

High Index of Clinical Suspicion remains Paramount to the Diagnosis and Treatment of Necrotizing Fasciitis, Regardless of LRINEC Score.

Introduction: Early diagnosis is missed in up to 90% of Necrotizing Fasciitis (NF) cases. The Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score has been introduced as a diagnostic tool for NF. LRINEC score has been shown to be a useful adjunct to diagnosing NF early, however only if the score is high (>6). We present two cases of NF with low LRINEC score where in one case, a delayed surgical debridement resulted in mortality.

Case Descriptions: A 60-year-old male with left arm pain, injected heroin 3 days prior to admission. Given the low LRINEC score of 4, surgical consultation recommended supportive treatment. His condition worsened and on hospital day (HD) 4, he had cardiac arrest. Bedside debridement confirmed NF. Patient ultimately passed away from septic shock.

A 45-year-old male with pre-diabetes admitted with the infected left leg. LRINEC score was 5. NF was suspected clinically and debridement was performed on HD 2. Post-operative pathology confirmed NF with *Streptococcus pyogenes*. He was discharged on HD 7.

Discussion: Recognition of NF and early debridement is the most important determinant of outcome in NF regardless of LRINEC score. Both cases had a low LRINEC score however, high suspicion and early intervention prevented morbidity and mortality in CASE 2. A multidisciplinary discussion on the above cases has led to creating a protocol and training our ED and surgical providers on clinical diagnostic clues and need for urgent surgical intervention for any suspected case of NF.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

30. Galang K, Patel K, Singh G.

Wound Botulism: Still a challenge to diagnose

Introduction: Botulism is a rare and potentially lethal illness caused by a toxin produced by *Clostridium botulinum*. It presents as acute cranial nerve palsies with descending flaccid paralysis. Typical transmission is through food, contaminated soil and open wounds; however, rarer mechanisms of transmission in intravenous drug users are reported. Early recognition and treatment are key for prevention of fatal outcomes.

Case Description: A 66-year-old female with past medical history of skin popping and intravenous drug use presents with a one-week history of shortness of breath and generalized weakness. Significant lethargy was noted, subsequently requiring intubation for acute combined hypoxic and hypercapnic respiratory failure. Physical examination was significant for ptosis, diminished strength in neck musculature and reduced reflexes in the upper extremities. An area of induration over the right buttock was also noted.

CT of the head revealed no acute pathology. CSF studies from lumbar puncture were normal. Ice pack test was also negative making myasthenia gravis less likely. Repetitive nerve stimulation demonstrated an incremental response suggestive of botulism. Botulinum anti-toxin was administered prior to serologic confirmation resulting in improvement of neurological status, ptosis, and muscle strength.

Discussion: Our case demonstrates that early recognition of botulism is essential and lifesaving. Although treatment remains supportive, antitoxin should be considered when clinical suspicion is high. A thorough history, neurological exam, and bedside tests may lead to a diagnosis of botulism.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

31. Ghotra G, Seraj SM.

Case of Aortic Thrombosis in a Poorly Controlled Ulcerative Colitis Patient

Introduction: Although ulcerative colitis (UC) primarily involves the bowel, it is associated with manifestations in other organ systems. Studies indicate that 25 percent of patients with UC will have an extra-intestinal manifestation in their lifetime. We present a rare case of infrarenal aortic thrombosis in the setting of poorly controlled ulcerative colitis disease.

Case presentation: A 63-year-old African American male with history of poorly controlled UC, diagnosed more than ten years ago, despite being on mesalamine, azathioprine and Humira, presented with complaints of pain and discoloration of his left first toe. The physical examination revealed a cold left foot with diminished distal pulses and discoloration of the left first toe. CT angiogram demonstrated aortic mural thrombosis and tibial peroneal trunk thrombosis leading to acute limb ischemia.

Discussion: Patients with IBD are at higher risk for venous and arterial thrombosis due to systemic inflammation causing endothelial damage, thrombocytosis (higher IL-6 and thrombopoietin) and even elevated anticardiolipin and beta 2 GP levels. Patient underwent left tibial peroneal trunk thromboembolectomy and endovascular aortic graft placement for the infrarenal aortic intramural thrombus. A colonoscopy was performed which revealed severe inflammation throughout the colon confirming the severity of the disease.

Conclusion: There are only a few case reports with patients with IBD developing aortic thrombi in the literature. Our case illustrates this rare, but limb threatening, complication of poorly controlled inflammatory bowel disease. Better control of UC and timely diagnosis of thrombotic event in these patients is crucial to prevent any further complications or morbidity.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

32. Mostamand M, Malik A, Seraj SM.

A Case of Peritoneal TB

Introduction: In 2017 there were 1887 cases of extrapulmonary TB with 6.2% peritoneal TB. More than 90% of patients with peritoneal tuberculosis present with ascites and 10% have the advanced dry phase which consists of a “doughy” abdomen from the fibro-adhesive form of the disease.

Case Description: A 33-year-old Guatemalan female presents with two-week history of abdominal bloating; exam revealed distended abdomen that was doughy on palpation with diffuse tenderness. CT imaging revealed abdominal ascites with vascular congestion of the omentum, enhancement of the peritoneum and a pulmonary nodule. Paracentesis studies were of an exudative fluid. Quantiferon was negative. Tissue retrieval from peritoneum was obtained through laparoscopy. PCR NAAT of tissue biopsy came back positive for mycobacterium tuberculosis complex. AFB culture of peritoneal tissue was positive. Of note, ADA on peritoneal fluid was ten times upper limit of normal. Peritoneum biopsy showed necrotizing granulomatous inflammation. The stains did not show infectious organism and AFB stain was negative. Patient was started on RIPE therapy and responded well.

Discussion: The utility of ascitic fluid NAAT for diagnosis of TB peritonitis has not been well established. Per literature review, there are 11 cases of abdominal tuberculosis with a positive PCR for MTB. Furthermore, in the US there is no approved NAAT for abdominal fluid or tissue testing. Our patient had a positive NAAT (tissue), elevated ADA despite negative QuantiFERON. Furthermore, despite pulmonary nodules, sputum AFB was negative. In conclusion, high clinical suspicion and tissue biopsy are the most crucial elements in diagnosis of such tough cases.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

33. Vosoughi E, Jung SM, Tiwana B, Yau T.

A Case of Tuberculoma with Disseminated Pulmonary Tuberculosis

Introduction: Intracranial tuberculomas are seen in 1% of patients with active tuberculosis (TB) and up to 28% of patients with tuberculosis meningitis. We present a rare case of TB tuberculomas who was diagnosed early and successfully treated.

Case Description: A 23-year-old female presented for headache, double vision, and weight loss for over 3 weeks. Patient visited India 6 months prior to presentation. She appeared chronically ill looking, thin and was alert and oriented. Pupils were reactive to light and left eye had limited lateral ocular movement. Kernig and Brudzinski signs were negative. Chest X-ray revealed fine nodules in both lung fields. One sputum specimen was positive for acid-fast bacilli. She refused lumbar puncture and MRI. Four antitubercular medications were initiated. Two weeks later, she presented for worsening of headache, double vision with nausea. Lumbar puncture was consistent with meningitis. Brain MRI revealed extensive nodular lesions, consistent with cerebral tuberculomas in the setting of active tuberculosis. Dexamethasone was added for 6 months. After completing 12 months of treatment, all her symptoms have been resolved.

Discussion: Although, there is no formal clinical trials, multiple reports suggest symptomatic benefit of steroid therapy in treatment for TB tuberculomas. The use of steroid is thought to reduce the body's immune response and reduce the incidence of hydrocephalus and brain infarction in patients with tuberculomas. While less common in developed countries, given frequency of worldwide travel, tuberculoma should be suspected in any patient presenting with focal neurological deficits particularly with underlying active TB.

CLINICAL VIGNETTE

INTERNAL MEDICINE SAN JOAQUIN GENERAL HOSPITAL

34. Yescas-Garibay K, Seraj SM.

An Unusual Presentation of SLE

Introduction: Vasculitic neuropathies are a group of peripheral nerve disorders associated with vasculitis. In SLE patients, neuropathy is seen 10-20% of cases.

Case Description: A 32-year-old female, with history of treated latent syphilis and inflammatory arthritis of undetermined etiology, presented with pain and swelling in lower extremities for 3 months, leg weakness for 2 weeks, and hand drop with numbness for 2 days.

Neurologic exam revealed symmetric distal weakness with complete hand and foot drop bilaterally, and $\frac{4}{5}$ strength in proximal muscles of upper and lower extremities. Deep tendon reflexes were absent except for knees. Sensation to proprioception were decreased in glove-stocking distribution, and allodynia.

Laboratory tests showed elevated ESR and CRP, positive ANA and ds-DNA antibodies, low C3, normal C4, and positive RPR and VDRL; Rest of serologic panel was negative. MRI of complete spine and lumbar puncture were unremarkable. Electromyography and nerve conduction studies showed severe, generalized axonal sensorimotor polyneuropathy. Biopsy of left sural nerve revealed severe, chronic and ongoing axonal neuropathy with loss of 80-90% of myelinated axons, and moderate inflammatory infiltrate within blood vessels throughout the nerve.

A diagnosis of SLE with vasculitic neuropathy was made.

Discussion: This case illustrates the clinical picture of a rare presentation of SLE. Prompt treatment in SLE vasculitic neuropathy with IVIg and steroids have the most favorable outcome.

CLINICAL VIGNETTE

SURGERY SAN JOAQUIN GENERAL HOSPITAL

35. Fernandes N, Nedopil S, Vyas D.

Malignant Melanoma Patient on Pembrolizumab, an Anti PD-1 antibody Checkpoint Inhibitor, Presenting with Gall Bladder Mass and Polyendocrinopathy

Introduction: Immunotherapy with checkpoint inhibitors can increase longevity in patients with metastatic melanoma. Side effects, while rare, may include life-threatening polyendocrinopathy that presents months after therapy and must be distinguished from previous or new unrelated disease, symptoms related to cancer progression, or side effects of treatment.

Case Description: We describe a case of a gallbladder mass and acute cholecystitis requiring cholecystectomy in a patient with stage IV unresectable non-ulcerated acryl lentiginous malignant melanoma who also presented with hypothyroidism, hypophysitis, adrenal insufficiency, and pneumonitis. The patient underwent laparoscopic cholecystectomy without complications, with subsequent gross pathology report showing a 3.5 x 3 x 2 cm exophytic mass. Record requests later clarified that the patient's endocrine abnormalities may have been side effects secondary to melanoma treatment with pembrolizumab (keytruda), a monoclonal anti-programmed cell death-1 antibody. A literature review further suggested that the gall bladder mass, despite being negative for standard histology markers, may be a unique expression of metastatic melanoma in patients treated with PD-1 inhibitors.

Discussion: Immunotherapy with pembrolizumab may have secondary and tertiary effects with unusual presentations that are difficult to interpret for the primary oncology team, and even tougher to do so for community physicians who may subsequently encounter these patients. Melanoma may also progress in novel ways in the presence of immune modulating pharmacotherapy. More data is needed to help guide decision algorithms and to predict which patients may experience these effects.

CLINICAL VIGNETTE

SURGERY SAN JOAQUIN GENERAL HOSPITAL

36. Lo P, Woods P

Tracheal Diverticulum Diagnosed in a Trauma Patient

Introduction: Tracheal diverticulum is a rare congenital or acquired benign disease usually discovered incidentally on imaging. It is an air sac of the trachea containing only respiratory epithelium and most commonly an asymptomatic entity. The incidence of tracheal diverticulum is approximately 1% in adults. In the setting of blunt trauma, tracheal diverticulum may be misinterpreted as traumatic rupture of the trachea.

Case Description: 60-year-old male presented s/p motor vehicle collision with complaint of right neck, shoulder, and chest pressure with neck flexion. Patient was a restrained rear seat passenger that was rear-ended while stopped at an intersection. Cervical-spine Computed Tomography showed a right paratracheal focus of air, concerning for tracheal or esophageal injury. Patient underwent additional imaging and admission to surgical ICU for airway monitoring. Additional imaging was negative for acute injuries and patient had no airway compromise. Patient was downgraded from surgical ICU on hospital day 2 and discharged on hospital day 3 without acute injuries.

Discussion: Tracheal diverticulum is a rare condition that can be mistaken for tracheal or esophageal injury especially in the setting of trauma. Incorrect identification of injury could lead to unnecessary surgery. Clinical judgment guided by patient history and physical exam places imaging into context to avoid erroneous diagnosis of injury. Computed tomography with three-dimensional reconstruction provides the clearest anatomical evidence for diagnosis. Additional imaging can assist in ruling out other sources of traumatic injuries such as esophagram for esophageal injury.

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