



4th Annual LMSA-RCM Research *Symposium*



UPR Medical
Sciences Campus



Saturday
April 11, 2026



PRHSJ

Puerto Rico Health Sciences Journal

Abstract Supplement

Abstracts*

Atypical Origin of the Pectoral Nerves: A Brachial Plexus Variation with Surgical Implications

José A. Rosario González, BS¹;
Natalia Valentin Carro, PhD²;
Shay Blanco Olivares, BS²;
Gabriella Torres Irizarry, MS²

¹University of Puerto Rico, Medical Sciences
Campus, School of Medicine, PO BOX 365067,
San Juan, PR 00936-5067, Puerto Rico;

²Department of Anatomy and Neurobiology,
University of Puerto Rico, Medical Sciences Campus,
School of Medicine, PO BOX 365067,
San Juan, PR 00936-5067, Puerto Rico

INTRODUCTION: Anatomical variations of the brachial plexus can significantly alter surgical risk during procedures involving the shoulder, clavicle, and chest wall. Variants affecting the pectoral nerves are uncommon and may predispose patients to iatrogenic denervation if unrecognized. We report a rare trunk-level origin of the pectoral nerves with important multidisciplinary implications.

CASE PRESENTATION: During routine cadaveric dissection of an elderly male at the University of Puerto Rico Medical Sciences Campus, an atypical brachial plexus configuration was identified. The lateral pectoral nerve originated directly from the anterior division of the middle trunk rather than the lateral cord. This branch contributed to an extended ansa pectoralis that crossed anterior to the axillary vessels and gave rise to the medial pectoral nerve. No contributions from the lateral or medial cords were present, resulting in complete bypass of the expected cord-level organization. Multiple variant branches ultimately innervated the pectoralis major, including a branch that pierced the pectoralis minor en route. Findings were confirmed through meticulous neurodissection, high-resolution imaging, and faculty review.

CONCLUSIONS: This rare configuration creates a single vulnerable trunk-level pathway supplying both

pectoral muscles, placing patients at increased risk of complete pectoral denervation during clavicle fixation, shoulder arthroplasty, deltopectoral approaches, tumor resections, and regional anesthesia. Awareness of such variants, along with careful surgical planning and intraoperative nerve identification, is essential to prevent avoidable nerve injury. Continued reporting of brachial plexus anomalies enhances anatomical understanding and improves surgical safety across orthopedic, reconstructive, trauma, and anesthetic disciplines.

Funding: This work was supported by the University of Puerto Rico School of Medicine Department of Anatomy and Neurobiology resources. The authors declare no conflicts of interest.

Patterns and Public Health Implications of Musculoskeletal Injuries from Motorcycle Trauma in Puerto Rico

José A. Rosario González, BS¹;
Héctor Sánchez-Fernández, MD²;
Norberto J. Torres-Lugo, MD²;
Juan A. Silva-Aponte, MD²; Luis Lojo-Sojo, MD²

¹University of Puerto Rico, Medical Sciences Campus,
School of Medicine, San Juan, Puerto Rico;

²Department of Orthopedic Surgery, University
of Puerto Rico, Medical Sciences Campus,
San Juan, Puerto Rico

PURPOSE: Motorcycle trauma represents a major source of high-energy injury in Puerto Rico and places a substantial burden on orthopedic and trauma services. Limited local data describe the epidemiology and anatomical distribution of musculoskeletal injuries in this population. This study aimed to characterize orthopedic injury patterns among hospitalized motorcycle trauma patients and highlight associated public health implications.

METHODS: A retrospective descriptive cohort study was conducted using the Puerto Rico Trauma Registry. Adult patients (≥18 years) admitted from 2016–2021 following motorcycle-related trauma requiring

***Disclaimer:** All information contained in this document was published as provided by LMSA.

orthopedic consultation were included. Demographic variables, injury patterns, fracture locations, hospital length of stay, and insurance coverage were analyzed using descriptive statistics. Group comparisons were assessed with the Wilcoxon–Mann–Whitney test. Approved by IRB.

RESULTS: A total of 832 patients were included; 91.1% were male with a mean age of 33.9 ± 12.8 years. Most patients sustained multiple injuries, with 4,383 fractures identified. The most frequent fracture locations were chest (33.8%), skull (33.2%), shoulder-humerus (26.0%), spine-pelvis (25.5%), and tibia-fibula/knee (24.0%). Open fractures accounted for 6.7% of cases. Median hospital length of stay was 10 days. Medicaid (38.0%) and automobile insurance (38.5%) were the primary payers.

CONCLUSION: Motorcycle trauma in Puerto Rico disproportionately affects young males and is associated with extensive orthopedic injury and prolonged hospitalization. These findings underscore the need for targeted prevention strategies, including enforcement and use of personal protective equipment (PPE), rider education, and traffic safety policies, to reduce preventable injuries and healthcare burden. Orthopedic injury surveillance should inform future public health and legislative interventions.

Funding: This work was supported by the resources of the University of Puerto Rico School of Medicine Department of Orthopedic Surgery and the data from the Puerto Rico Trauma Center. The authors declare no conflicts of interest.

Impact of Social Determinants of Health on Patient-Reported Outcomes After Robotic TKA in Hispanic Patients

José A. Rosario González, BS¹;
Héctor E. Sánchez Fernández, MD²;
Juan Silva, MD²; Víctor J. Colón Sánchez, BS¹;
Giam L. Bosques Roig, BS¹;
Diego F. Santiago Jiménez, BS¹;
Antonio Otero López, MD²

¹University of Puerto Rico, Medical Sciences Campus, School of Medicine, San Juan, Puerto Rico;

²Department of Orthopedic Surgery, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico

PURPOSE: Social determinants of health (SDOH) significantly influence recovery after total knee arthroplasty (TKA), yet data on Hispanic patients—particularly in Puerto Rico—remain limited. This study evaluated patient-reported outcomes (PROMs) following robotic-assisted TKA in a Spanish-speaking Hispanic population and examined the impact of socioeconomic and access-related factors on recovery.

METHODS: A prospective outcomes study was conducted among Hispanic patients aged ≥ 50 years who underwent robotic MAKO-assisted TKA between 2024 and 2025 at a single academic institution. Demographic, clinical, and SDOH variables were collected. PROMs included KOOS, WOMAC, SF-12, PROMIS-10, and EQ-5D. Preoperative scores were compared with postoperative follow-up using paired t-tests, and associations between SDOH and outcomes were assessed using independent t-tests ($p < 0.05$). TKA between 2024 and 2025 at a single academic institution. Demographic, clinical, and SDOH variables were collected. PROMs included KOOS, WOMAC, SF-12, PROMIS-10, and EQ-5D. Approved by IRB.

RESULTS: PROM data were available for 131 patients preoperatively, 49 at one month, and 23 at three months. Significant postoperative improvements were observed across multiple PROMs. KOOS increased from 37.1 ± 16.8 to 54.0 ± 18.6 and 66.0 ± 14.0 , while WOMAC decreased from 56.0 ± 21.2 to 33.0 ± 21.0 and 20.5 ± 13.0 (all $p < 0.0001$). PROMIS-10 Physical scores improved from 37.2 ± 7.4 to 47.4 ± 6.5 , and Mental scores improved from 48.6 ± 9.2 to 53.5 ± 7.6 . Lower socioeconomic status, public insurance, transportation barriers, and limited rehabilitation access were associated with worse baseline PROMs and reduced follow-up adherence, whereas higher health literacy and primary care access correlated with better outcomes.

CONCLUSION: SDOH strongly influence patient-reported recovery following robotic-assisted TKA in Hispanic patients. Addressing socioeconomic, access-related, language, and cultural barriers is essential to improving postoperative outcomes and promoting equity in orthopedic care.

Funding: This work was supported by the University of Puerto Rico School of Medicine Department of Orthopedic Surgery resources. The authors declare no conflicts of interest.

The Dangers of Foreign Body Ingestions in Prader Willi Syndrome Patients

Andrea N. Rivera Rosario, BS¹;
Rafael Ortiz Fonseca, BS¹;
Isabel Sánchez Cano, MD^{1,2}

¹University of Puerto Rico
School of Medicine, San Juan P.R.;

²University Pediatric Hospital
Dr. Antonio Ortiz, San Juan P.R.

INTRODUCTION: Prader Willi Syndrome (PWS) is a rare genetic disease caused by abnormal DNA methylation in chromosome 15. PWS incidence is estimated at 0.47 for every 10,000 live births in Puerto Rico. This syndrome is characterized by insatiable hunger, intellectual disability, behavioral issues, and hypotonia. Impaired satiety and behavioral dysregulation place affected individuals at increased risk for ingestion of foreign bodies and potentially toxic substances.

CASE PRESENTATION: An 18-year-old female with a history of PWS was brought into the pediatric ED by her father due to a foreign body ingestion. The patient had been alone prior to the event and subsequently told her parents she had swallowed a school eraser. From this time to her ER visit, she had not consumed food or liquids. She felt an object stuck in her throat and was unable to clear oral secretions, which raised concern for esophageal obstruction. Imaging visualized a rectangular body from the C6 to T1 spinal levels. The patient was admitted for removal of the eraser via balloon-assisted retrograde extraction by the Otolaryngology service. She was discharged the following day. Although she had previously ingested non-food objects, this was the first time she required surgical intervention.

CONCLUSION: Hyperphagia and impaired behavioral control in PWS can lead to recurrent foreign body ingestions with escalating severity over time. This case highlights the need for anticipatory guidance, environmental safeguards, and caregiver support to reduce ingestion risk, as well as early multidisciplinary

involvement to prevent recurrent emergency visits and potentially life-threatening complications.

APThera™ Intraocular Lens Implantation in a Latino Population: A Case Series

Kevin Santiago, BS; Natalio J. Izquierdo, MD;
José J. López-Fontanet, MD;
Miguel A. Santiago, MD

¹Department of Ophthalmology,
University of Puerto Rico Medical Sciences Campus,
San Juan, Puerto Rico; ²Instituto de Ojos de
Puerto Rico, Carolina, Puerto Rico

PURPOSE: To evaluate postoperative visual and refractive outcomes following implantation of the small-aperture, extended depth of focus Aphera™ intraocular lens (Bausch and Lomb, Rochester, NY, USA) in a Latino population.

METHODS: An Institutional Review Board-approved retrospective chart review of 49 Latino patients who underwent Aphera™ intraocular lens implantation was performed. Uncorrected distance visual acuity (UDVA), uncorrected near visual acuity (UNVA), spherical equivalent (SE), and refractive astigmatism were analyzed preoperatively and at one- and six-month follow-up visits. Mixed-effects regression analyses were performed.

RESULTS: Forty-nine patients underwent surgery, including 18 males (37%) and 31 females (63%), with a mean age of 56.5 years. In Aphera™ eyes, mean UNVA improved from 0.715 LogMAR preoperatively to 0.149 at one month and 0.116 at six months. In fellow eyes, mean UDVA improved from 0.255 LogMAR preoperatively to 0.068 at one month and 0.059 at six months. Regression analyses demonstrated significantly more myopic postoperative SE outcomes in Aphera™ eyes compared to fellow eyes at one month ($p=0.002$) and six months ($p<0.001$). Residual astigmatism trended higher in Aphera™ eyes but did not reach statistical significance.

CONCLUSION: Aphera™ intraocular lens implantation demonstrated favorable postoperative visual and refractive outcomes in this Latino population, with significant improvement in near visual acuity and predictable refractive outcomes. Residual astigmatism did not significantly improve postoperatively.



Orbital Metastasis of Cutaneous Melanoma: A Case Report and Review of the Literature

Angelica C. Santos Puig, BA¹;
Fabiola Ramos Nieves, MD¹;
Noel Perez Soto, MD¹

¹University of Puerto Rico - School of Medicine,
Department of Ophthalmology,
San Juan, Puerto Rico

INTRODUCTION: Cutaneous melanoma is an aggressive malignancy with a high propensity for hematogenous metastasis. Orbital metastasis is a rare manifestation, typically presenting in the setting of advanced disease associated with a poor prognosis. Primary melanoma of the plantar foot is uncommon and often diagnosed at a progressed stage due to its concealed location. We report a rare case of plantar cutaneous melanoma of the right foot with metastasis to the left orbit.

CASE PRESENTATION: A 70-year-old female, with a history of right plantar cutaneous melanoma diagnosed in 2022, presented with two months of progressive left eye fullness, redness, and vision loss. Examination revealed marked left-sided proptosis, restricted extraocular motility, and decreased visual acuity. Orbital CT demonstrated a 2.5×2.6×2.8 cm lobulated soft-tissue mass in the left intraconal compartment, causing optic nerve displacement and extraocular muscle compression. Surgical orbitotomy with partial excision was performed. Histopathology confirmed metastatic malignant melanoma with diffuse and strong positivity for S100 and MART-1, patchy HMB-45 positivity, and a Ki-67 proliferation index of 61-70%. Despite initial symptomatic improvement, the patient developed recurrent orbital disease with optic nerve compression, ultimately requiring orbital exenteration. Systemic disease progression ensued, and the patient was transitioned to palliative care.

CONCLUSION: This case highlights a rare presentation of plantar cutaneous melanoma with contralateral orbital metastasis. Clinicians should maintain a high index of suspicion for orbital

metastasis in patients with a history of melanoma presenting with new ocular symptoms, as screening and early diagnosis may aid symptom control and guide management decisions, improving overall prognosis.

Funding: No financial support.

Reproductive Factors Correlate with Psychosis Prodrome Risk in Perimenopausal Women

Adrianisse G. Vega-Reyes, BS¹,
Megan Kelley, PhD², Albert Powers, MD, PhD²

¹School of Medicine, University of Puerto Rico,
Medical Sciences Campus,
San Juan, Puerto Rico 00921;

²Department of Psychiatry, Yale School of
Medicine, New Haven, CT, 06520

INTRODUCTION. Psychosis is a mental disorder often preceded by a prodromal phase of attenuated symptoms. Understanding this prodromal phase is key to identifying individuals at heightened risk for psychosis. Perimenopause, a transitional stage marked by declining ovarian function and reduced estrogen levels, represents a time of heightened vulnerability, as abrupt hormonal changes may precipitate psychotic symptom emergence. We hypothesized that reproductive history, specifically the duration of hormonally intact reproductive years, differs between individuals with higher versus lower prodromal psychosis risk.

METHODS. Female participants aged 40–60 years (n=196) were pre-screened for attenuated psychotic symptoms and perimenopausal status. Participants completed a modified Reproductive History Questionnaire and the Prodromal Questionnaire–Brief (PQ-B), approved by IRB. Regression analyses examined associations between PQ-B scores and age of menarche, age of perimenopause onset, and total reproductively normal years (the interval between menarche and perimenopause onset).

RESULTS. Age of menarche was positively associated with PQ-B scores, such that earlier menarche was linked to lower attenuated symptom burden ($R = 0.0597$, $p < 0.001$). Age of perimenopause onset was negatively associated with PQ-B scores, indicating

greater symptom burden with earlier perimenopause ($R = 0.0623$, $p = 0.0026$). Total reproductively normal years were also negatively correlated with PQ-B scores, suggesting fewer prodromal symptoms among women with longer reproductive lifespans ($R = 0.0821$, $p < 0.001$).

CONCLUSION. Reproductive history is associated with menopause-related psychosis risk, supporting a role for sex hormones such as estrogen in psychosis emergence and underscoring the importance of reproductive factors in risk assessment during perimenopause.

Funding. This work was supported by the National Institute of Mental Health (K23MH115252, R21MH122940, R01MH129721, R01MH131768), the Burroughs Wellcome Fund Career Award for Medical Scientists, the Carol and Eugene Ludwig Award for Early Career Research, and the Yale Department of Psychiatry and Yale School of Medicine.

Bilateral Tibial Hemimelia Knee Disarticulation and Upper Limb Syndactyly Reconstruction

Bryan Pons Adorno, BS²;
José Rodríguez Semidey, MD¹; Sara Nossov, MD³;
Scott Kozin, MD³; Christian Foy, MD¹;
Humberto Guzmán, MD¹

¹University of Puerto Rico, Medical Sciences Campus,
School of Medicine, Orthopedic Surgery Section,
San Juan, Puerto Rico;

²University of Puerto Rico, Medical Sciences Campus,
School of Medicine, San Juan, Puerto Rico;

³Shriners Children's Hospital

INTRODUCTION: Tibial hemimelia is a rare congenital anomaly, occurring in about 1 per 1 million live births, characterized by the partial or complete absence of the tibia. Bilateral cases are even rarer, causing significant functional impairment. Syndactyly, one of the most common hand anomalies, involves the failure of digital separation. The coexistence of these deformities may involve impairments in key limb development signaling pathways, like FGF, Wnt, BMP, and Sonic hedgehog. The optimal timing and technique for surgical intervention in complex bilateral cases is still undetermined.

CASE PRESENTATION: We present the case of a male patient with bilateral tibial hemimelia and concurrent right-hand syndactyly. Initially evaluated in infancy, imaging confirmed complete agenesis of both tibias, posterior knee subluxation with absent extensor mechanism, and incomplete soft-tissue syndactyly between the index and long fingers of the right hand, with one absent digit. Due to socioeconomic barriers, the patient was lost to follow-up, reappearing at age 10, presenting with chronic knee-walking pain and severe flexion contractures. Inconclusive genetic testing revealed variants of uncertain significance. Working alongside physicians from Shriners Children's Hospital and supporting their mission to provide care closer to home, the patient underwent a single operative session for simultaneous bilateral knee disarticulation and reconstruction of the right hand for syndactyly.

CONCLUSION: This case highlights the unique challenges posed by delayed treatment in rare limb deficiencies. The intervention, which required multi-institutional collaboration and individualized surgical planning, is the first time that Shriners Children's Hospital has operated in Puerto Rico.

Does Robotic TKA Reduce Postoperative Inflammatory Markers vs Conventional TKA?

Ángel A. Cintrón Stuart, BS⁴;
José I. Acosta Julbe, MD¹;
Juan Silva Aponte, MD¹;
Derick Rodríguez Reyes, MD³;
Bryan G. Pons Adorno, BS²;
Antonio Otero, MD¹

¹University of Puerto Rico, Medical Sciences
Campus, School of Medicine, Orthopaedic Surgery
Section, San Juan, Puerto Rico;

²University of Puerto Rico, Medical Sciences Campus,
School of Medicine, San Juan, Puerto Rico;

³Ponce Health Sciences University,

School of Medicine, Orthopaedic Surgery Section;

⁴San Juan Bautista School of Medicine,
Caguas, Puerto Rico

INTRODUCTION: Total knee arthroplasty (TKA) is a common, cost-effective orthopaedic procedure. U.S.

volumes are projected to reach 3.5 million annually by 2030. On average, TKAs cost hospitals \$10,421 and \$11,906 for primary TKA and revision TKA, respectively. Robotic-assisted TKA (RA-TKA) adoption increased by ~85% per year from 2018–2021. Compared with conventional (CM) TKA, advances in RA-TKA provide more precise implant placement and improved surgical outcomes; however, it remains unclear how these surgical approaches affect the body's inflammatory response, a crucial factor in postoperative recovery and the risk of complications. This scoping review maps the existing literature comparing inflammatory markers after RA-TKA and CM TKA, identifying gaps and opportunities for future research.

METHODS: A comprehensive literature search was conducted in accordance with the PRISMA-ScR checklist. We considered studies published in English or Spanish from 2000 onward. We excluded articles unrelated to the topic, that lacked direct comparisons, or that lacked data on inflammatory markers; we also excluded reviews, case reports, or commentaries. Data focused on comparative reported postoperative inflammatory markers were extracted from the included studies. This review analyzed only previously published data and did not require IRB approval.

RESULTS: Four studies met the inclusion criteria and were analyzed, comparing inflammatory markers, including CRP, ESR, IL-6, and TNF- α , and showed significantly lower CRP, ESR, and IL-6 levels in RA-TKA than in CM-TKA. One study reported significantly lower TNF- α levels in RA-TKA than in CM-TKA.

CONCLUSIONS: The findings suggest lower postoperative inflammatory marker levels in RA-TKA, indicating reduced surgical trauma, improved recovery, and potentially fewer complications.

Acknowledgements: None.

Hispanic Women's Knowledge about Polycystic Ovary Syndrome Complications

Beatriz P Díaz-Ríos, BS¹;
Josefina Romaguera, MD, MPH²;
Loida A González-Rodríguez, MD³

¹MD Program, University of Puerto Rico School of Medicine, San Juan, PR, USA;

²Department of Obstetrics and Gynecology, University of Puerto Rico School of Medicine, San Juan, PR, USA;

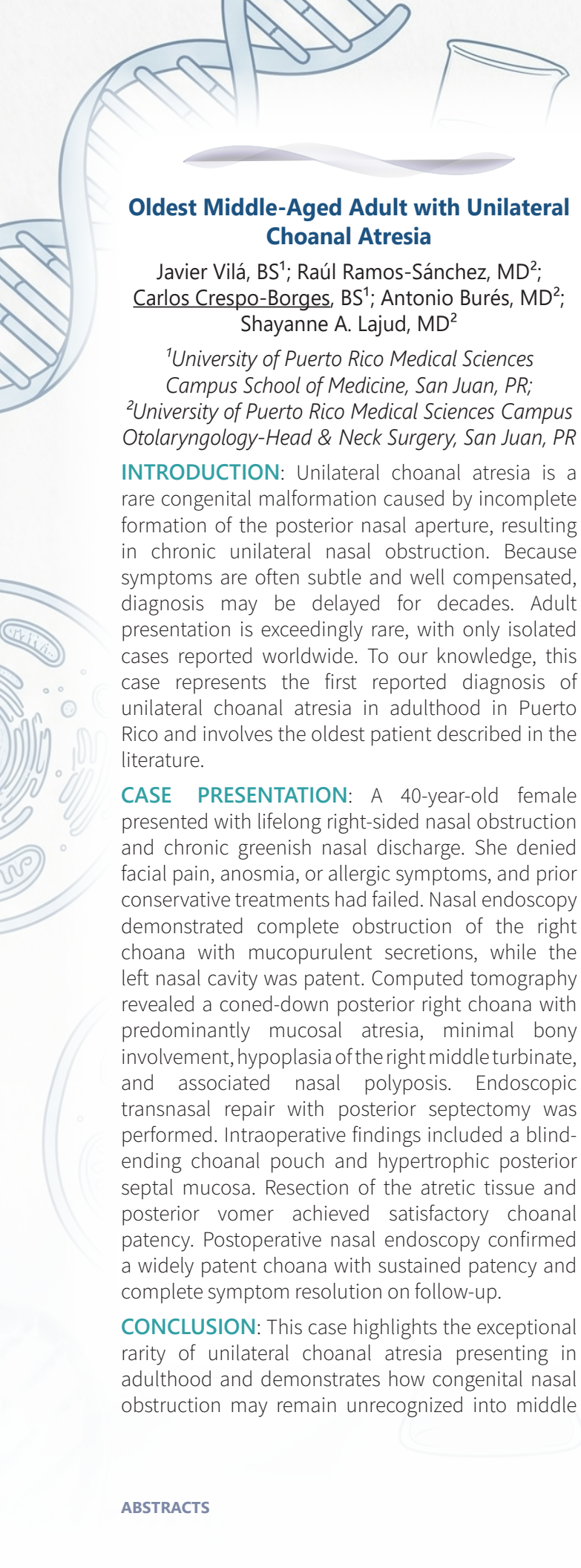
³Endocrinology, Diabetes and Metabolism Division, Medicine Department, University of Puerto Rico School of Medicine, San Juan, PR, USA

PURPOSE: Polycystic Ovary Syndrome (PCOS) is one of the most common metabolic and endocrine conditions in women. PCOS is characterized by an increased risk of clinical complications including cardiovascular disease, cancer, and obesity. Studies have revealed a general understanding on PCOS, but insufficient knowledge about its comorbidities. This study aims to evaluate the knowledge about PCOS complications in sample of Hispanic women.

METHODS: Descriptive cross-sectional study including Hispanic patients living in Puerto Rico, 21–45 years old. Participants recruited from the UPR-RCM General Endocrinology and Gynecology Clinics completed a self-administered questionnaire. Approved by IRB.

RESULTS: A total of 112 women were included in this study, 29% with a PCOS diagnosis. Most participants associated PCOS with an increased risk of infertility (70%), depression and anxiety (62%), and metabolic syndrome (56%). Most participants agreed that obesity exacerbates metabolic and endocrine irregularities (76%), and that obesity causes adverse effects on PCOS patients (70%). Only 27% associated PCOS with an increased risk of cardiovascular disease, 54% with endometrial cancer, 52% with obesity, 49% with elevated blood sugar, and 50% with insulin resistance. Participants diagnosed with PCOS demonstrated an increased knowledge when associating PCOS with metabolic syndrome, obesity, adverse effect of obesity, elevated blood sugar levels, and insulin resistance.

CONCLUSION: This study suggests that there is a general understanding about PCOS complications among this sample, but a lack of knowledge about some complications particularly in the control group. This study highlights the necessity to raise awareness on the complications surrounding PCOS for early prevention and treatment.



Oldest Middle-Aged Adult with Unilateral Choanal Atresia

Javier Vilá, BS¹; Raúl Ramos-Sánchez, MD²;
Carlos Crespo-Borges, BS¹; Antonio Burés, MD²;
Shyanne A. Lajud, MD²

¹University of Puerto Rico Medical Sciences
Campus School of Medicine, San Juan, PR;

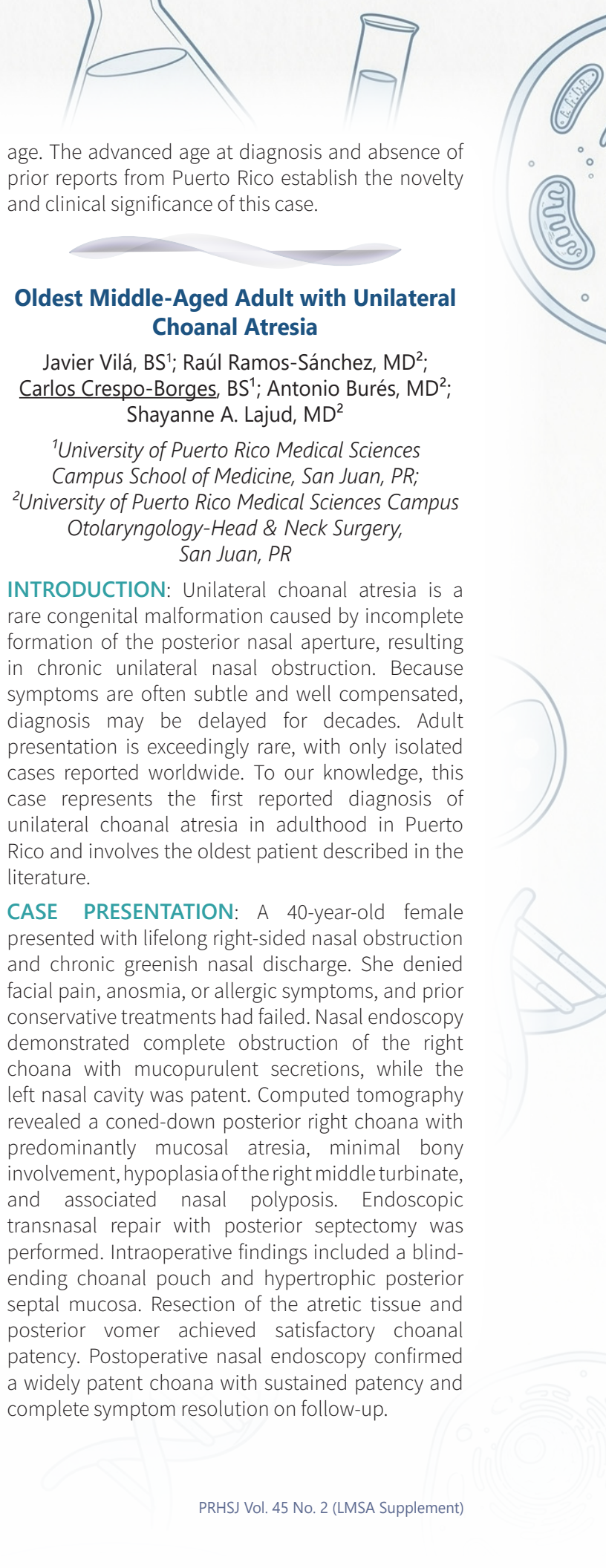
²University of Puerto Rico Medical Sciences Campus
Otolaryngology-Head & Neck Surgery, San Juan, PR

INTRODUCTION: Unilateral choanal atresia is a rare congenital malformation caused by incomplete formation of the posterior nasal aperture, resulting in chronic unilateral nasal obstruction. Because symptoms are often subtle and well compensated, diagnosis may be delayed for decades. Adult presentation is exceedingly rare, with only isolated cases reported worldwide. To our knowledge, this case represents the first reported diagnosis of unilateral choanal atresia in adulthood in Puerto Rico and involves the oldest patient described in the literature.

CASE PRESENTATION: A 40-year-old female presented with lifelong right-sided nasal obstruction and chronic greenish nasal discharge. She denied facial pain, anosmia, or allergic symptoms, and prior conservative treatments had failed. Nasal endoscopy demonstrated complete obstruction of the right choana with mucopurulent secretions, while the left nasal cavity was patent. Computed tomography revealed a coned-down posterior right choana with predominantly mucosal atresia, minimal bony involvement, hypoplasia of the right middle turbinate, and associated nasal polyposis. Endoscopic transnasal repair with posterior septectomy was performed. Intraoperative findings included a blind-ending choanal pouch and hypertrophic posterior septal mucosa. Resection of the atretic tissue and posterior vomer achieved satisfactory choanal patency. Postoperative nasal endoscopy confirmed a widely patent choana with sustained patency and complete symptom resolution on follow-up.

CONCLUSION: This case highlights the exceptional rarity of unilateral choanal atresia presenting in adulthood and demonstrates how congenital nasal obstruction may remain unrecognized into middle

age. The advanced age at diagnosis and absence of prior reports from Puerto Rico establish the novelty and clinical significance of this case.



Oldest Middle-Aged Adult with Unilateral Choanal Atresia

Javier Vilá, BS¹; Raúl Ramos-Sánchez, MD²;
Carlos Crespo-Borges, BS¹; Antonio Burés, MD²;
Shyanne A. Lajud, MD²

¹University of Puerto Rico Medical Sciences
Campus School of Medicine, San Juan, PR;

²University of Puerto Rico Medical Sciences Campus
Otolaryngology-Head & Neck Surgery,
San Juan, PR

INTRODUCTION: Unilateral choanal atresia is a rare congenital malformation caused by incomplete formation of the posterior nasal aperture, resulting in chronic unilateral nasal obstruction. Because symptoms are often subtle and well compensated, diagnosis may be delayed for decades. Adult presentation is exceedingly rare, with only isolated cases reported worldwide. To our knowledge, this case represents the first reported diagnosis of unilateral choanal atresia in adulthood in Puerto Rico and involves the oldest patient described in the literature.

CASE PRESENTATION: A 40-year-old female presented with lifelong right-sided nasal obstruction and chronic greenish nasal discharge. She denied facial pain, anosmia, or allergic symptoms, and prior conservative treatments had failed. Nasal endoscopy demonstrated complete obstruction of the right choana with mucopurulent secretions, while the left nasal cavity was patent. Computed tomography revealed a coned-down posterior right choana with predominantly mucosal atresia, minimal bony involvement, hypoplasia of the right middle turbinate, and associated nasal polyposis. Endoscopic transnasal repair with posterior septectomy was performed. Intraoperative findings included a blind-ending choanal pouch and hypertrophic posterior septal mucosa. Resection of the atretic tissue and posterior vomer achieved satisfactory choanal patency. Postoperative nasal endoscopy confirmed a widely patent choana with sustained patency and complete symptom resolution on follow-up.

CONCLUSION: This case highlights the exceptional rarity of unilateral choanal atresia presenting in adulthood and demonstrates how congenital nasal obstruction may remain unrecognized into middle age. The advanced age at diagnosis and absence of prior reports from Puerto Rico establish the novelty and clinical significance of this case.

Crohn Disease Presenting as an Acute Surgical Abdomen in Midlife

Víctor J. Colón Sanchez¹,
Andrea P. Oliveras Arimont¹, Luis Velez MD²,
Vanessa Sepúlveda Rivera MD³

¹University of Puerto Rico, Medical Sciences
Campus, School of Medicine, San Juan, Puerto Rico;

²Internal Medicine - Pediatrics Residency Program,

³UPR SOM, Internal Medicine Department,
University of Puerto Rico, Medical Sciences Campus,
San Juan, PR, USA

INTRODUCTION: Crohn disease can present as an acute surgical abdomen, leading to misdiagnosis and unnecessary operative intervention. Later-onset presentations are rare and may further complicate diagnosis due to lower clinical suspicion. We report a case of Crohn disease presenting with physical exam findings concerning for acute appendicitis.

CASE PRESENTATION: A 44-year-old woman with a history of type 2 diabetes mellitus, hypertension, asthma, and gastroesophageal reflux disease, arthritis, migraines, anxiety, and depression presented with acute projectile vomiting, severe abdominal pain, and profuse diarrhea. Pain began in the epigastrium and localized to the right lower quadrant, accompanied by chills and subjective fever. Physical examination demonstrated rebound tenderness and positive Rovsing, psoas, and obturator signs, raising concern for appendicitis. Laboratory studies revealed microcytic iron-deficiency anemia (hemoglobin 9.3 g/dL, mean corpuscular volume 73 fL, iron 20 µg/dL) and elevated inflammatory markers (C-reactive protein 10.1 mg/L, erythrocyte sedimentation rate 20 mm/hr) without leukocytosis. Abdominopelvic CT with contrast demonstrated circumferential bowel wall thickening, mucosal hypertrophy, enhancement of the terminal ileum with

surrounding fat stranding, prominent mesenteric and inguinal lymphadenopathy, and free fluid, consistent with active on chronic inflammation and suggestive of Crohn disease rather than appendicitis. Gastroenterology consultation favored inflammatory bowel disease, and infectious evaluation resulted negative.

CONCLUSIONS: This case highlights Crohn disease as an important non-surgical cause of right lower quadrant pain with misleading appendicitis signs, particularly in later-onset presentations. Early recognition of characteristic imaging findings and supportive laboratory abnormalities is essential to avoid unnecessary surgical intervention and diagnostic delay.

Clinical-Demographic Profile of Puerto Rican Patients With Family History of Early-Onset Alzheimer's

Emilie I. Dávila Perea, BA¹;
Aleyda E. Maldonado, PhD¹;
Nicole Bonilla Medina²;
Christian Schenk, MD¹;
Ivonne Z. Jiménez Velázquez, MD¹

¹School of Medicine, University of Puerto Rico
Medical Sciences Campus, San Juan,
Puerto Rico 00921;

²University of Puerto Rico Rio Piedras Campus,
San Juan, Puerto Rico 00925

PURPOSE: Sociodemographic factors and vascular comorbidities have been shown to influence cognitive function in Latino patients, but evidence specific to Puerto Rican patients is limited. This study provides a descriptive account of the clinical and demographic characteristics of Puerto Rican patients with a family history of early-onset Alzheimer's disease (EOAD).

METHODS: An IRB-approved descriptive analysis was conducted among Puerto Rican patients with a family history of EOAD who underwent evaluation. Participants completed the Short Blessed Test, Clinical Dementia Rating, and neurocognitive assessments and were classified as unaffected, memory change, or affected. Demographics, comorbidities, and medication use were

summarized per group. Vascular burden index (VBI) was calculated by assigning one point per vascular comorbidity.

RESULTS: A total of 181 participants were included (unaffected $n = 99$; memory change $n = 38$; affected $n = 44$). Mean age increased across cognitive categories (51, 56, and 68 years), while years of education decreased (15, 13, and 13 years). VBI scores were higher among memory change and affected participants compared with unaffected participants (1.4 and 1.3 vs. 0.9). Antidepressant use (9%, 34%, and 43%) and anti-hyperlipidemic use (16%, 26%, and 43%) increased across categories. Hypertension was more prevalent in the memory change and affected groups (58% and 52%) compared with unaffected participants (36%).

CONCLUSION: In this cohort, greater cognitive impairment was associated with older age, higher VBI, and lower educational attainment. These findings underscore the importance of examining modifiable vascular and lifestyle factors in relation to cognitive impairment in at-risk Puerto Rican populations.

FUNDING: Funded by the NIH.

Evaluating Treatment Satisfaction and Pharmacological Response in Patients with Inflammatory Bowel Disease

Fabiola T. Matos-Jiménez, BS^{1,2};
Humberto R. Nieves-Jiménez, MD^{1,3,4};
Stephanie Ortiz-Domenech, MS^{1,5};
Fabiola Marrero-Concepción, BS¹;
Manuel A. Colón-Terrón, MD^{1,6};
Jesús G. Rivera-Román, MD^{1,2};
Jon C. Vélez-Morell, MD^{1,7};
Esther A. Torres, MD¹

¹Center for Inflammatory Bowel Diseases,
University of Puerto Rico – Medical Sciences
Campus, San Juan, Puerto Rico;

²University of Puerto Rico School of Medicine,
San Juan, Puerto Rico;

³Department of Internal Medicine,
Baylor College of Medicine, Houston, Texas;
⁴Division of Internal Medicine, The University of
Texas MD Anderson Cancer Center,
Houston, Texas;

⁵Department of Psychology, University of Puerto
Rico – Río Piedras Campus, San Juan, Puerto Rico;

⁶Department of Surgery, Hospital Episcopal
San Lucas, Ponce, Puerto Rico;

⁷Universidad Central del Caribe School of Medicine,
Bayamón, Puerto Rico

PURPOSE: Inflammatory bowel disease (IBD) requires long-term pharmacologic treatment to achieve disease control. Treatment response may vary, and patient satisfaction is an important component of care. This study evaluated pharmacologic treatment patterns and their association with patient satisfaction in a tertiary care IBD cohort.

METHODS: Patients with IBD attending a tertiary care clinic completed a treatment satisfaction survey using a 5-point Likert scale. Medical records were reviewed to identify therapies, including 5-aminosalicylic acid (5-ASA; ulcerative colitis only), corticosteroids, anti-tumor necrosis factor (anti-TNF) agents, and other biologics. Treatment response was classified as response, loss of response, or no response based on clinical course and need for therapy modification. Bivariate analyses were performed to assess associations between treatment response, satisfaction, and disease subtype. The study was approved by the Medical Sciences Campus Institutional Review Board (IRB). Statistical significance was defined as $p < 0.05$.

RESULTS: A total of 175 patients were included (mean age 32.1 ± 11.3 years; 139 Crohn's disease, 36 ulcerative colitis). Anti-TNF agents (84.6%), corticosteroids (66.9%), other biologics (31.4%), and 5-ASA in ulcerative colitis patients (86.1%) were commonly used. Overall, 70.3% of patients reported being satisfied or very satisfied with treatment, while 12.0% reported dissatisfaction. Response rates were highest with other biologics (78.2%) and corticosteroids (69.2%). No significant association was observed between treatment response, loss of response, and patient satisfaction ($p > 0.05$).

CONCLUSION: Most patients reported high treatment satisfaction regardless of pharmacologic response, underscoring the importance of patient-centered care, expectation management, and multidisciplinary support in the comprehensive management of IBD.

Epidemiology and Age-Related Patterns of Genitourinary Trauma in Puerto Rico

Roberto C. Matos-Figueroa, BS^{1,2},
Carlos R. Garriga-Santiago, BS^{1,2},
Ediel O. Ramos-Meléndez, MPH, DrPH²,
Lourdes Guerrios-Rivera, MD, MSc^{1,2},
Pablo Rodríguez-Ortiz, MD, FACS,
FCCM, FACP, FCCP^{1,2}.

¹University of Puerto Rico School of Medicine,
Medical Sciences Campus, San Juan, Puerto Rico;
²Department of Surgery, Trauma Research Program,
Medical Sciences Campus, University of Puerto Rico,
San Juan, Puerto Rico

INTRODUCTION: Genitourinary (GU) trauma accounts for 10–20% of abdominal injuries globally, yet data in Puerto Rico remains limited. Injury patterns, organ involvement and outcomes differ with age group. Given the island's aging population, understanding these trends is essential for improving management. This study is the first in the region to examine and compare the epidemiology of GU trauma by age.

METHODS: An IRB-approved retrospective study was conducted of patients with GU trauma admitted to the Puerto Rico Trauma Hospital from 2017-2025. Patients were classified as non-geriatric (18–64 years) or geriatric (≥ 65 years). Data was compared using Chi-square or Fisher's Exact tests. Statistical significance was considered when $p < 0.05$.

RESULTS: Among 10,151 trauma admissions, 695 (6.8%) involved GU injuries. Geriatric patients accounted for 12% of cases. Falls were the leading mechanism among geriatrics (42.8% vs. 9.3%), whereas firearms (3.6% vs. 30.4%) and motor-vehicle accidents (17.8% vs. 21.6%) predominated in non-geriatrics ($p < 0.01$). The most affected organs were the kidney (54.8%) and bladder/urethra (23.5%). Adrenal injuries were more frequent in geriatrics (25% vs. 13.4%, $p < 0.01$), and scrotal/testicular injuries were less frequent (1.2% vs. 9.0%, $p = 0.01$). Complications were higher in geriatrics compared to non-geriatrics, including acute kidney injury (19.1% vs. 8.4%), urinary tract infection (15.5% vs. 7.0%), arrhythmia (8.3% vs. 1.5%) (all $p < 0.01$), and mortality (22.6% vs. 8.0%, $p < 0.01$).

CONCLUSION: GU trauma patterns in Puerto Rico differ by age. Geriatrics sustain fewer injuries but exhibit distinct mechanisms and organ involvement. They also experienced worse outcomes, underscoring the need for age-focused trauma management.

IgG4-Related Ophthalmic Disease or Ocular Mucous Membrane Pemphigoid: A Diagnostic Challenge

Víctor J. Colón Sanchez¹,
Andrea P. Oliveras Arimont¹,
Miguel Hernández², Luis Velez MD³,
Vanessa Sepúlveda Rivera MD⁴

¹University of Puerto Rico, Medical Sciences Campus,
School of Medicine, San Juan, Puerto Rico;
²Ophthalmology Residency Program, UPR SOM;
³Internal Medicine -
Pediatrics Residency Program, UPR SOM;
⁴Internal Medicine Department, University of
Puerto Rico, Medical Sciences Campus,
San Juan, PR, USA

INTRODUCTION: Chronic autoimmune ocular surface disease presents diagnostic challenges, particularly when histopathologic and immunofluorescence studies are negative. IgG4-related ophthalmic disease (IgG4-ROD) and ocular mucous membrane pemphigoid (OcMMP) share overlapping clinical and radiologic features, complicating diagnosis. This case highlights limitations of immunopathologic testing and the importance of integrating clinical progression, imaging, and serologic findings in biopsy-negative disease.

CASE PRESENTATION: A 31-year-old woman with recurrent conjunctival inflammation since childhood, asthma, and obesity presented with progressive left-eye pain, photophobia, and decreased vision after years of episodic symptoms. A conjunctival biopsy in 2024 demonstrated chronic submucosal inflammation with fibrosis and negative direct and indirect immunofluorescence for IgG, IgG4, IgA, IgE, and complement deposition, despite elevated serum IgG4 levels. Orbital magnetic resonance imaging showed mild left lacrimal gland enlargement with a

6 × 10 mm lipomatous lesion suggestive of lipoma versus dacryoadenitis. Computed tomography of the chest, abdomen, and pelvis showed no lymphadenopathy or multiorgan involvement, and the patient did not meet 2019 ACR/EULAR criteria for IgG4-related disease. Ophthalmologic examination revealed conjunctival fibrosis, fornix shortening, and progressive symblepharon consistent with stage III OcMMP. Intravenous methylprednisolone resulted in marked symptomatic improvement; symptom recurrence during taper confirmed steroid dependence. Due to poor response to repository corticotropin injection, rituximab therapy was recommended.

CONCLUSIONS: This case demonstrates diagnostic complexity between OcMMP and IgG4-ROD in biopsy-negative, localized ocular disease. Recognition of characteristic clinical progression and interdisciplinary collaboration is critical to prevent irreversible ocular scarring. Early immunosuppressive therapy, including rituximab, should be considered in clinically evident OcMMP despite negative immunopathologic findings.

Clinical Features and Management of Pediatric Dog-Bite Injuries in a Puerto Rican Population

Deyna Morales-Carrasquillo, BS^{1†};
Natalia I. Yordán-Fernández, BS^{1†};
Eliomar Rosa-Ramón, BS²;
Derek J. Caro-Rodríguez, BS²;
David A. Febre-Alemañy, BS²;
Patricia M. De Llovio-Castro, BS³;
Paula S. Santos-Santiago, BS³;
Ángel E. Rivera-Barrios, MD, FACS⁴

¹University of Puerto Rico School of Medicine;

²San Juan Bautista School of Medicine,
Department of Surgery;

³Universidad Central del Caribe
School of Medicine, Department of Surgery;

⁴University of Puerto Rico School of Medicine,
Department of Surgery, Division of Plastic &
Reconstructive Surgery

†These two authors contributed
equally to this work.

INTRODUCTION: Dog bite injuries are a frequent cause of pediatric emergency department (ED) visits. The severity of these injuries can range from superficial lacerations to avulsion injuries with extensive tissue loss. Children are susceptible due to smaller size and curiosity. There is limited data describing injury patterns, complications, and need for management escalation in Puerto Rico. This single-center five-year retrospective study aims to characterize clinical features in pediatric patients with dog bite injuries.

METHODS: Electronic health records were queried for pediatric patients who presented at the University Pediatric Hospital ED with dog bite injuries between 2020-2025. Data on length of stay (LOS), injury site, operative intervention, familiarity, and infection rates were collected. Descriptive statistics were used to summarize patient characteristics, injury patterns, and outcomes.

RESULTS: A total of 265 pediatric patients with median age of 7 years (interquartile range [IQR] 3.75–11.0) of which 52.8% were males and 47.2% females. Most injuries were inflicted by family-owned dogs (62.0%). Operative intervention was required in the minority of cases (11.7%), and infection rate was 4.9%. Injuries to the face predominated (70.6%), followed by involvement of upper (8.7%) and lower (7.5%) limbs. Facial injuries were associated with higher admission rates (81.2%), while lower extremity involvement required longer hospital stays (median 10 days, IQR 1–21).

CONCLUSION: Pediatric dog-bite encounters were predominantly facial, and operative intervention was required in a small proportion of patients. Although infection rates were low, nonfacial injuries were associated with higher infection rates and longer LOS. These findings support standardized documentation and management pathways.

Normal Tension Glaucoma with Concurrent Homonymous Hemianopsia: A Case Report

Ana I. Hernández González, BS^{1,2};
Tiffany Fuentes González, BS¹;
Sergio Pérez Guerrero, BS¹;
Gustavo A. Hernández Maldonado, MD²

¹*School of Medicine, University of Puerto Rico,
Medical Sciences Campus,
PO BOX 365067, San Juan,
Puerto Rico 00936-5067;*

²*Metropolitan Institute of Ophthalmology,
1789 PR-21 Suite 310, San Juan,
Puerto Rico 00921*

INTRODUCTION: Normal Tension Glaucoma (NTG) is a subtype of chronic open-angle glaucoma with normal intraocular pressure (IOP). Risk factors include migraine, hypotension, and vascular disease. Patients may present with nasal step, arcuate, or paracentral scotomas. Homonymous hemianopsia (HH) is not associated with NTG but rather a retro-chiasmal lesion.

CASE PRESENTATION: A 67-year-old man with diabetes and hypertension treated with metformin and an Angiotensin-converting enzyme inhibitor presented with recent vision loss. Examination revealed visual acuity of 20/40 (Snellen) and IOP of 18 mmHg (Goldmann Applanation Tonometry) bilaterally. Funduscopy revealed asymmetric cup-to-disc (C/D) ratios (OD 0.56, OS 0.63). Optical coherence tomography demonstrated retinal nerve fiber layer thinning in the superior and inferior quadrants, especially in the left eye. Visual field testing revealed inferior arcuate scotomas and left HH with right macular sparing. Corneal pachymetry was normal (OD 540 μ m, OS 557 μ m). Magnetic resonance imaging revealed encephalomalacia and gliosis in the bilateral medial occipital lobes and cerebellar hemispheres, consistent with a posterior cerebral artery (PCA) lesion. A diagnosis of NTG was established, and prostaglandin analog therapy was initiated.

CONCLUSION: This case underscores the importance of recognizing that visual field defects may have a multifactorial etiology in NTG. While NTG can account for arcuate scotomas, atypical findings such as HH should prompt evaluation for central nervous system pathology. Clinicians should maintain a high index of suspicion for concurrent retro-chiasmal disease and pursue neuroimaging when visual field patterns are inconsistent with isolated optic nerve pathology, particularly in patients with shared vascular risk factors.

FUNDING: No external funding was received.

Management Patterns of Cutaneous Hemangiomas Across the Lifespan in a Puerto Rican Cohort

*Patricia Sánchez-Orive, BS¹;
David Febre-Alemañy, BS²;
Liara S. Ortiz-Ocasio, BS¹;
Rafael Rodríguez-Rivera, BS¹;
Ángel Rivera-Barrios, MD, FACS¹*

¹*Plastic Surgery, University of Puerto Rico
School of Medicine, San Juan, Puerto Rico;*

²*San Juan Bautista School of Medicine,
Caguas, Puerto Rico*

PURPOSE: Hemangiomas are benign vascular tumors that involve dysregulated vessel growth and development. Infantile hemangiomas affect approximately 4-5% of infants and typically undergo gradual spontaneous involution. In contrast, adult hemangiomas are less likely to regress and more often require intervention. Hemangiomas may be managed medically with propranolol or corticosteroids, or procedurally with embolization and surgery. This study aimed to evaluate management patterns across the lifespan in a Puerto Rican cohort.

METHODS: We conducted an IRB-approved retrospective review of patients diagnosed with cutaneous hemangiomas from 2020–2025 at University of Puerto Rico–affiliated hospitals. Data on demographics, lesion characteristics, and treatment were collected. Pediatric patients were defined as ≤ 21 years.

RESULTS: A cohort of 48 patients were included in our study. Nine-teen (39.6%) patients were >21 years old and 60.4% (n=29) were ≤ 21 years old. Among pediatric patients, 62.1% (n=18) were male. In the adult cohort, hemangiomas were more common in females (57.9%). Adults were twice as likely to be treated non pharmacologically in comparison to the pediatric cohort ($p<0.001$). Adults (89.5%) were most likely to be treated with embolization, whereas most pediatric patients were managed medically (51.7%), with smaller proportions undergoing embolization (34.5%) or surgery (13.8%). Facial involvement was present in 22 cases (45.8%) overall and was significantly more common in adults than pediatric patients.

CONCLUSION: Management patterns of hemangiomas differed across the lifespan in this cohort. Adult patients were more likely to require procedural intervention and to present with facial involvement, whereas pediatric cases were more frequently managed medically.

Radionecrosis in Parasagittal Meningiomas Following Stereotactic Radiosurgery

Ricardo G. Blanco-Ortiz, BSc;
Esteban R. Rivera-Rivera, MD;
Gloria-Carrasquillo, MS, DS;
Miguel Mayol del Valle, MD

*University of Puerto Rico, Medical Sciences Campus,
Section of Neurosurgery, San Juan,
Puerto Rico 00967*

PURPOSE: Single-fraction stereotactic radiosurgery (SRS) with a median dose of 15Gy is considered a safe treatment modality for meningiomas. We aim to describe our institutional experience with radionecrosis (RN) following single-fraction SRS for parasagittal meningiomas (PSM) and describe key clinical characteristics and patient outcomes.

METHODS: We conducted an IRB approved retrospective review of 29 WHO grade I-II PSM patients who underwent SRS and evaluated imaging post-treatment, clinical symptoms, radiographic features, diagnostic workup and treatments. The association between lesion volume and prescription dose was assessed using Spearman's rank correlation coefficient. A two-sided p-value < 0.05 was considered statistically significant. Statistical analyses were performed using RStudio with R Commander.

RESULTS: In 29 lesions treated with single-fraction SRS, lesion volume showed substantial variability, while prescription dose clustered at 14 Gy. No significant association was observed between lesion volume and prescription dose ($p = 0.16$, $p = 0.40$), consistent with clinically individualized dose planning. However, 2 patients developed suspected radionecrosis (RN). A 70-year-old male with a 3.4x6x7 cm lesion presented with headache and weakness, while a 48-year-old with a 2.6x3.5x2.5 cm lesion presented with seizures. Both demonstrated expected RN findings of peritumoral vasogenic edema on follow-up imaging.

CONCLUSION: This study suggests that RN following single-fraction SRS did not associate with tumor size or prescription dose, making this adverse outcome unpredictable and likely due to confounding factors. These findings prompted a shift in our institution toward hypofractionated SRS for PSM and the development of prospective studies aimed at systematically evaluating toxicity, radiographic findings and clinical outcomes at this dosing.

Funding: This study received no specific funding.

From Control to Eradication: Puerto Rico's Malaria Campaign (1923–1954)

Rafael A. Ortiz, BS¹; Diego S. Vargas, BS¹;
Javier E. Agrelo, BS¹; Angel R. Ocasio, BS¹;
Dashira Cerda, BS³; Brandon E. Fernández, BS⁴;
Adelfa E. Serrano, PhD^{1,2}

¹*University of Puerto Rico School of Medicine,
San Juan, Puerto Rico;*

²*Department of Microbiology and Immunology,
University of Puerto Rico School of Medicine,
San Juan, Puerto Rico;*

³*University of Puerto Rico, Mayagüez Campus,
Mayagüez, Puerto Rico;*

⁴*Polytechnic University of Puerto Rico,
San Juan, Puerto Rico*

PURPOSE: To highlight how Puerto Rico achieved a sustained transition from malaria control to eradication, evolving from localized vector control to islandwide surveillance and elimination.

METHODS: Historical synthesis of governmental program summaries and technical reports documenting governance, interventions, financing, and quantitative outcomes from 1923–1954.

RESULTS: The Negociado de Control de Malaria was established in 1923, launching structured vector control supported by external co-funding. Early efforts emphasized drainage, larval control, and environmental engineering. The early 1930s exposed program fragility: malaria expanded into interior municipalities despite ongoing campaigns, while requests for quinine and technical assistance increased (85 petitions from 37 municipalities, 1930–1931). Fiscal constraints following Hurricane San

Felipe and the global depression reduced municipal capacity, driving prioritization and standardization of interventions. During 1932–1933, large-scale blood examinations continued (14,019 samples; 44.9% positive), alongside organized antimalarial drug distribution through the healthcare system. By 1938, records documented substantial burden (35,659 cases; 1,962 deaths), though a declining trend had emerged. This decline became more pronounced by 1946 after more than a decade of coordinated surveillance, case management, and environmental control, with cases decreasing to 5,584 and deaths to 672. Indoor residual DDT spraying was subsequently incorporated into this established control infrastructure, functioning as a complementary vector-suppression tool and contributing to the interruption of local transmission of *Anopheles albimanus*.

CONCLUSIONS: Puerto Rico's eradication pathway reflects layered intervention, with the 1930s marking a transition toward consolidated surveillance, treatment delivery, and administrative capacity that enabled post-war eradication.

Funding: This research was partially supported by NIH- NIMHHD U54 MD007600 award U54MD00760.

Conflict of Interest: The authors have no conflict of interest to disclose.

Treatment of Subcorneal Pustular Dermatitis with Adalimumab: A Case Report

Roberto A. Oliveras-Meléndez, BS¹;
Cristina P. Gerena-Maldonado, MD²;
Gerardo Caussade-Silvestrini, BS¹;
Francisco Colon, MD²;
Oscar Nevarez-Pomales, MD²

¹University of Puerto Rico, Medical Sciences Campus, School of Medicine, San Juan, Puerto Rico;

²Department of Dermatology, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico

INTRODUCTION: Subcorneal pustular dermatosis (SPD) is a rare, chronic condition characterized by the formation of sterile neutrophilic pustules on otherwise normal skin. The lesions contain purulent

and clear fluid components, and usually form annular or serpiginous patterns. The pustules may be accompanied by pain, pruritus, and irritation, or, rarely, systemic symptoms. Although locations vary, these pustules are commonly found on the thorax, abdomen, and intertriginous areas. First-line treatment for SPD is dapsone, but other medications, such as corticosteroids and retinoids, may be used if dapsone is ineffective. Recently, case reports have presented effective SPD treatment with tumor necrosis factor-alpha (TNF- α) inhibitors.

CASE PRESENTATION: A 33-year-old female patient presented to the dermatology clinics with a 3-year history of skin lesions of unknown cause. Examination revealed erythematous macules and crusted lesions covering her thorax, abdomen, back, and upper extremities. Biopsy results suggested an SPD diagnosis and the patient was started on 50mg/day of dapsone, as per current guidelines. Doses were adjusted, with a maximum of 100mg/day, but, due to adverse effects, other therapies, such as prednisone and acitretin, were attempted. However, none achieved full or permanent remission. Finally, an 80mg adalimumab induction dose, with 40mg every 2 weeks, was administered and the patient has achieved 1 year of total symptom resolution.

CONCLUSION: This case highlights the effective treatment of SPD with adalimumab therapy and correlates with findings in similar case reports. While further research is necessary to elucidate adalimumab's role in SPD treatment, this case serves as observational evidence for its utility.

E-cigarette or Vaping Use-Associated Lung Injury (EVALI): Clinical Cases of the Adult University District Hospital

Victoria A. Blaiotta-Vazquez, MPH¹;
Victoria I. Pellot-Ortiz, BS¹;
Angel Laureano Cuadrado, MD¹

¹University of Puerto Rico, Medical Sciences Campus, School of Medicine, San Juan, PR

INTRODUCTION: E-cigarette or Vaping Product Use-Associated Lung Injury (EVALI) emerged as a public health crisis in 2019. It is characterized as a diagnosis

of exclusion because it presents with respiratory, gastrointestinal, and constitutional symptoms that often overlap with other respiratory diseases.

METHODS: This is a retrospective case series that describes the clinical presentation, management, and outcomes of three adult male patients admitted to the Adult University District Hospital in San Juan, Puerto Rico, between September 2019 and November 2020. Inclusion criteria required documented lung infiltrates, hypoxemia, and suspected use of e-cigarettes. Confidentiality was maintained throughout the project; IRB approval was not required.

RESULTS: All three patients presented with acute respiratory distress, including cough and dyspnea. Imaging consistently revealed diffuse bilateral ground-glass opacities and pulmonary infiltrates, and laboratory findings showed marked leukocytosis. One patient developed severe Acute Respiratory Distress Syndrome complicated by multidrug-resistant bacterial infections and subsequently died. The remaining two patients achieved clinical recovery following supportive care and broad-spectrum antibiotic therapy. Notably, all 3 cases reported or had suspected histories of E-cigarette use preceding symptom onset

CONCLUSION: These cases highlight the need for clinicians to maintain a high index of suspicion for EVALI in patients presenting with unexplained respiratory failure and lung injury pathology. The coexistence of EVALI and secondary infections can significantly increase mortality, therefore early identification through detailed exposure histories and aggressive management of both inflammatory and infectious components are important to improve patient outcomes in hospitals.

Funding: not applicable

Price Variability in Common Neurosurgical Procedures in Top U.S Hospitals

Victoria I. Pellot Ortiz, BS¹;

Karolina I. Pellot Ortiz, MD^{2,3};

Francisco J. Ramirez Lopez, MS, BS²;

Joyce Campos, BS⁴; Jonathan Stone, MD, Mse³

¹Universidad de Puerto Rico, Medical Sciences
Campus, San Juan, PR;

²Ponce Health Sciences University,
School of Medicine, Ponce PR;

³Neurosurgery Department, University of Rochester
Strong Memorial Hospital, NY;

⁴San Juan Bautista School of Medicine.

INTRODUCTION: Federal hospital price transparency regulations were enacted to help patients anticipate healthcare costs. Procedure-level cost information is often inconsistently reported for identical services.

METHODS: We conducted a cross-sectional analysis of public machine-readable files (MRFs) from a top-100 U.S. hospital cohort, extracting hospital-reported standard charges for ten high-volume neurosurgical CPT codes. Hospitals were excluded if an MRF was not publicly available, if CPT-linked line items were absent, or if a usable standard charge could not be identified. CPT codes were located using exact identifiers and confirmed using procedure descriptions; when a standard charge was unavailable, minimum and maximum values were recorded. This study used publicly available hospital pricing data; IRB approval was not required.

RESULTS: 83 hospitals met inclusion criteria. CPT-level price reporting was frequently incomplete. Standard-charge reporting ranged from 26.5% for cranial tumor excision with navigation to 50.6% for anterior cervical discectomy and fusion, while up to 65.1% of hospitals provided no usable CPT-level price for certain cranial procedures. Among hospitals reporting standard charges, median prices varied substantially by procedure and demonstrated right-skewed distributions. Interhospital dispersion was extreme across CPT codes, with max-to-min ratios ranging from 77.8-fold to 8,903.6-fold for identical procedures.

CONCLUSION: Among these U.S. hospitals, CPT-level price reporting remains inconsistent and vary for the same procedures. Standardized, procedure-level reporting frameworks may be necessary to enable meaningful cost comparison and support value-based neurosurgical care.

FUNDING: None.