Case Report | Clinical Science | Cardiac Surgery

Intra-operative Microaxial LVAD Support in High-Risk Mitral Valve Replacement

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Introduction/Objective: Rheumatic heart disease (RHD) is a global health issue with increasing mortality in the U.S. over the past decade. Severe mitral regurgitation from RHD can lead to adverse left ventricular (LV) remodeling and heart failure. The Impella 5.5 device provides temporary mechanical circulatory support in patients with advanced LV dysfunction, but its use following mitral valve replacement (MVR) for RHD has not been well documented.

Case Presentation: Patient is a 68-year-old woman with end-stage heart failure (EF 15-20%) secondary to RHD who underwent bioprosthetic mitral valve replacement with intraoperative temporary mechanical circulatory support. Due to severely depressed LV function and high operative risk (STS 33.2%), an Impella 5.5 was placed intraoperatively. The device enabled successful separation from cardiopulmonary bypass with minimal ionotropic support.

Discussion: Patients with RHD and poor LV function are at high risk for postoperative low cardiac output syndrome. The Impella 5.5 provides effective LV unloading, reduced wall stress, and improved systemic perfusion while avoiding the retrograde flow and afterload increase associated with VA-ECMO. Compared with IABP, it offers superior hemodynamic support. This case demonstrates that early intraoperative Impella support can aid recovery in high-risk valve surgery.

Conclusion: Impella 5.5 may be a viable option for temporary mechanical circulatory support following MVR in select high-risk patients with severe LV dysfunction.

Case Report | Clinical Science | General Surgery

Which came first the Appendicitis or the Incarcerated Femoral Hernia; a Case Report on De Garengeot Hernia

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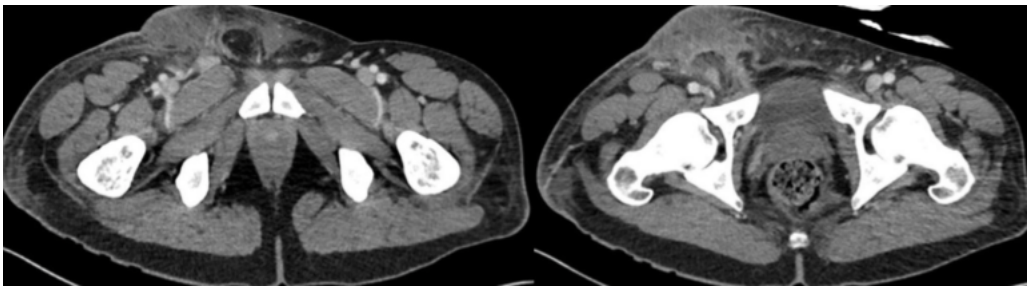
Introduction/Objective: De Garengeot hernia, the presence of the appendix within a femoral hernia sac, is a rare and diagnostically challenging entity. The sequence of pathological events and optimal management strategies remains unclear, with few cases reported and no established guidelines [1,2].

Case Presentation: A 35-year-old male with no significant history presented to our emergency department (ED) with one week of right lower quadrant pain, fever, and right groin erythema, with development of an underlying abscess at the time of surgical evaluation. CT significant for a right femoral hernia containing the appendix with associated tip appendicitis (Figure 2), warranting prompt surgical intervention. Via an open inguinal incision, the perforated appendix was found within the femoral defect. After diagnostic laparoscopy found no evidence of intra-abdominal contamination and attempts at laparoscopic reduction had failed, the appendix was then mobilized, divided, and removed entirely via the inguinal incision. The hernia defect was closed using the McVay tissue repair technique, with subcutaneous tissue left to heal by secondary intention.

Discussion: The pathogenesis and optimal management of De Garengeot hernia remain uncertain [1,2,3]. Our case demonstrates the utility of a combined open and laparoscopic approach, tailored to intraoperative findings and degree of contamination. This approach facilitated safe removal of the appendix and hernia repair in a contaminated field, but further evidence is needed to establish best practices.

Conclusion: De Garengeot hernia is a rare and often misdiagnosed condition. Our case adds to the limited literature and highlights the need for further study surrounding pre-operative diagnosis and individualized management [1,2].



Case Report | Education | General Surgery

Robotic Repair of Small Bowel Obstruction Secondary to Gallstone Ileus: A Rare Case

NY Atassi, J Elhaj, K Brakta, Willis Knighton Health

Introduction/Objective: Gallstone ileus is a rare complication of biliary disease caused by passage of a gallstone through a cholecystoenteric fistula, leading to small bowel obstruction. Because of its nonspecific presentation, diagnosis is often delayed, contributing to increased morbidity. While enterolithotomy, one-stage, and two-stage procedures are described, minimally invasive approaches are rarely reported.

Case Presentation: A 56-year-old female with no prior surgical history presented with one week of abdominal pain, nausea, and vomiting. Initial CT with intravenous contrast showed dilated small bowel loops with a transition point in the right lower quadrant. Repeat CT with PO contrast demonstrated pneumobilia, a decompressed gallbladder, and a 2.5 cm intraluminal focus in the ileum consistent with a gallstone. The patient underwent robotic diagnostic laparoscopy with enterolithotomy and retrieval of a large gallstone from the terminal ileum. The procedure was well tolerated, and she was cleared for discharge on postoperative day three.

Discussion: Enterolithotomy alone remains the safest and most effective treatment for gallstone ileus, as most biliary-enteric fistulas close spontaneously. Robotic-assisted enterolithotomy, though rarely reported, offers superior visualization, precision, and minimally invasive benefits.

Conclusion: This case demonstrates the feasibility and safety of robotic management for gallstone ileus, representing a valuable alternative to traditional open or laparoscopic approaches.

Case Report | Clinical Science | General Surgery

Staged repair and primary closure of atraumatic right-sided diaphragmatic hernia causing small bowel obstruction

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Introduction/Objective: Atraumatic diaphragmatic hernia is rare in adults and often discovered incidentally. Right-sided hernias are even less common due to the protective effect of the liver. Importantly, they may in some cases lead to small bowel obstruction and strangulation warranting prompt surgical intervention. Here we discuss a rare finding of a right-sided, atraumatic diaphragmatic hernia resulting in small bowel resection and staged repair without the use of mesh.

Case Presentation: A 44-year-old female presented with sudden onset severe right upper quadrant abdominal pain. CT imaging revealed a diaphragmatic hernia containing a portion of the small bowel and liver capsule. The patient was emergently taken for exploratory laparotomy, revealing a diaphragmatic defect containing liver along with frankly ischemic bowel requiring resection of approximately 120 cm. Given the tenuous condition of the small bowel, the patient was left in discontinuity. On post-operative day 2, the patient returned to the operating room for reevaluation of the bowel, with subsequent small bowel anastomosis and primary repair of the hernia defect. The patient recovered without incident and was discharged on post-operative day 6.

Discussion: Right-sided, atraumatic diaphragmatic hernias causing small bowel obstruction are rare but require prompt recognition and surgical treatment. There are few reported incidents of staged repairs utilizing primary repair without mesh in the current literature.

Conclusion: Staged repair and primary closure of an atraumatic diaphragmatic hernia is a viable option for patients with resulting small bowel obstruction requiring extensive resection. This allows the patient to adequately stabilize prior to performing a primary repair of the hernia defect.

Case Report | Clinical Science | Gynecology Oncology and Plastic Surgery

A Multidisciplinary Approach by Gynecologic Oncology and Plastic Surgery for Complex Abdominal Wall Reconstruction Following Giant Ovarian Tumor Resection: A Case Report

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Introduction/Objective: Giant epithelial ovarian tumors, including serous and mucinous cystadenomas, are rare benign neoplasms that can reach massive dimensions, often exceeding 10 cm [1,2]. Their expansion can cause abdominal distension, thinning of the abdominal wall, and loss of domain, creating significant gynecologic oncologic and reconstructive challenges. Following tumor resection, the risk of fascial dehiscence or evisceration can be life-threatening, underscoring the need for multidisciplinary management to ensure oncologic safety and durable abdominal wall restoration [3].

Case Presentation: A 41-year-old G4P3104 woman with morbid obesity (BMI of 62.5 kg/m2), abnormal uterine bleeding, and newly diagnosed type 2 diabetes mellitus presented with progressive abdominal distension. Imaging revealed a 28 cm right ovarian cystic mass with benign features and normal tumor markers. After stabilization for sepsis and anemia, she underwent exploratory laparotomy, total abdominal hysterectomy, right oophorectomy, and left salpingectomy. A 40 cm torsed ovarian tumor containing 25.2 liters of serosanguinous fluid was removed. Plastic surgery performed immediate abdominal wall reconstruction with fleur-de-lis panniculectomy, and midline fascial plication reinforced by an onlay ovine-derived tissue matrix. Pathology confirmed benign cystadenoma (585.8 g) with torsion necrosis and an endometrial polyp. The patient healed without major wound complications, demonstrating restored abdominal wall stability and over 50-pound weight loss.

Discussion: Fascial loss following massive tumor resection necessitates durable reconstruction using vascularized tissue flaps and an ovine derived matrix to ensure long term abdominal wall integrity.

Conclusion: Early collaboration between gynecologic oncology and plastic surgery is essential in managing giant benign ovarian tumors, ensuring safe resection, durable reconstruction, and favorable patient outcomes.

Case Report | Clinical Science | Pediatric Surgery

An Unusual Cause of Pneumoperitoneum in a Preterm Neonate

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Introduction/Objective: Common etiologies of pneumoperitoneum among the neonatal population include necrotizing enterocolitis and spontaneous hollow viscus perforation. However, pneumoperitoneum secondary to perforation of a Meckel's diverticulum is an exceptionally rare occurrence. Below, we describe the case of a preterm infant found to have pneumoperitoneum due to a perforated Meckel's diverticulum.

Case Presentation: A preterm male, delivered via cesarean section at 29 weeks gestation, developed mild abdominal distention and a metabolic acidosis on day three of life. An initial abdominal radiograph demonstrated mildly distended loops of bowel without other acute findings. Later that evening, a radiograph obtained for PICC line placement incidentally revealed free intraperitoneal air without an obvious source. During subsequent exploratory laparotomy a perforated Meckel's diverticulum was found in the ileum. Diverticulectomy was performed and the abdomen was irrigated and closed. The patient's postoperative course was uneventful. He began enteral feeds on post-op day 11 and was later discharged home in stable condition.

Discussion: Meckel's diverticula are common in the general population and are generally benign. In neonates, symptomatic manifestation by way of perforation is extremely uncommon. This may mimic other more common etiologies of neonatal pneumoperitoneum such as spontaneous intestinal perforation or necrotizing enterocolitis. Early radiographic findings can be nonspecific, and definitive diagnosis is often made intraoperatively.

Conclusion: This case highlights the importance of maintaining a broad differential for findings of pneumoperitoneum in neonates. Surgical intervention in this scenario is both diagnostic and therapeutic, and prompt management can result in excellent clinical outcomes.

Case Report | Clinical Science | Pediatric Surgery

Neonatal Nicolau Syndrome Following Intravenous Administration of Adult-Dosed Benzathine Benzylpenicillin: Case Report and Literature Review

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Introduction/Objective: Nicolau syndrome (embolia cutis medicamentosa) is a rare iatrogenic complication producing ischemic necrosis following parenteral medication administration. The proposed pathophysiology of this syndrome differs by route of administration. With intramuscular injections, proposed mechanisms include direct arterial embolic occlusion, physical vessel obstruction, or inadvertent intra-arterial injection leading to direct vascular injury. In reported intravenous cases, the mechanism is thought to involve acute vasospasm from peri-venous injection or extravasation rather than true intravenous delivery. delineate diagnostic features and early management considerations relevant to pediatric surgeons and neonatologists to promote timely recognition and treatment of this potentially fatal syndrome. Here we describe, to our knowledge, the first neonatal case following true intravenous administration of benzathine benzylpenicillin, and delineate diagnostic features and early management considerations relevant to pediatric surgeons and neonatologists to promote timely recognition and treatment of this potentially fatal syndrome.

Case Presentation: A 3-day-old, 3-kg term female was undergoing treatment for congenital syphilis with intravenous penicillin G when an adult dose of benzathine benzylpenicillin, an intramuscular depot formulation, was inadvertently administered intravenously via a right foot peripheral IV line at 2.4 million units (approximately an 800-fold overdose relative to an expected neonatal dose of ~3,000 units). Within two hours, the infant developed severe pain, weakness and livedoid reticular purpura of both lower extremities extending to the buttocks and perineum. Arterial duplex ultrasonography demonstrated patent common and superficial femoral arteries with loss of identifiable distal flow below the knee but without identifiable thrombi, concerning for diffuse microvascular injury. Vascular surgery was consulted, and therapeutic heparin, pentoxifylline, and topical nitroglycerin were initiated. Despite medical therapy, progressive soft-tissue necrosis necessitated serial debridements, a right through-knee amputation, and diverting colostomy because of extensive perineal involvement. The patient ultimately recovered and was discharged home.

Discussion: The bilateral, multifocal distribution and severity in this case differ from previously reported neonatal intramuscular injection events and from prior intravenous reports. Our case reflects a distinct mechanism: true intravenous administration of a depot penicillin through a functioning peripheral line. Although the precise pathogenesis remains uncertain, the widespread pattern is consistent with systemic microcrystal embolization to distal arterioles and capillaries. The extreme overdose likely overwhelmed the small-caliber neonatal vasculature with particulate matter, producing diffuse microvascular occlusion rather than the localized ischemia typical of perivenous extravasation or intramuscular injection. Evidence-based treatment protocols are lacking; however, our experience suggests potential benefit from early systemic anticoagulation to limit thromboembolic propagation, with adjunctive pentoxifylline and topical nitroglycerin to

address possible vasospastic components, acknowledging that the efficacy of these measures remains debated. This case underscores that Nicolau syndrome is an under-recognized entity that can progress rapidly to catastrophic tissue loss. Early identification of characteristic livedoid purpura after injection or infusion should prompt immediate vascular evaluation, as irreversible necrosis may evolve within hours. Essential management principles include urgent recognition, multidisciplinary surgical consultation, empiric anticoagulation in the absence of contraindications, and staged surgical debridement as demarcation declares.

Conclusion: To our knowledge, this is the first documented neonatal case of Nicolau syndrome following true intravenous administration of benzathine benzylpenicillin. The bilateral distribution and severity suggest systemic involvement, distinguishing it from localized venous or intramuscular injuries predominantly cited in the literature. Nicolau syndrome remains critically under-recognized despite potentially fatal outcomes, particularly in neonates. Early recognition and coordinated multidisciplinary care are paramount to preserve limb viability and prevent mortality.es

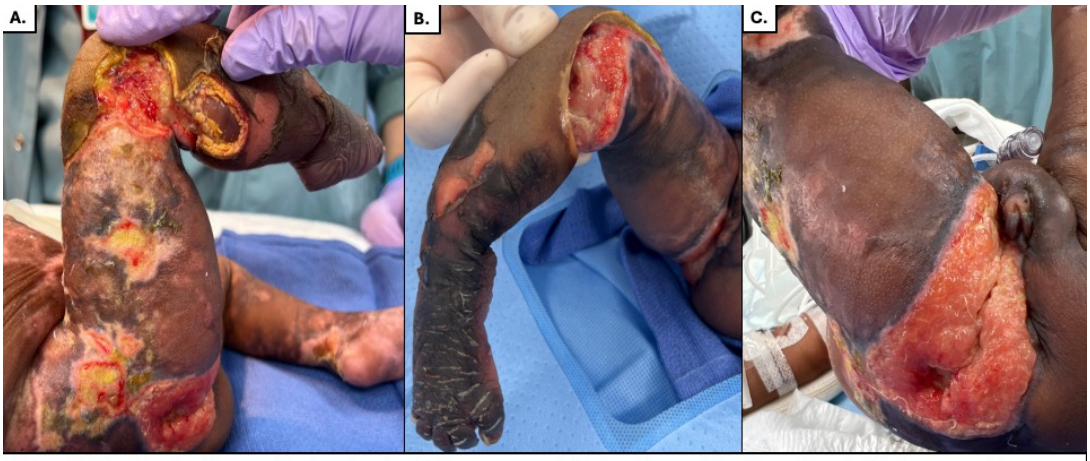

Figure 1. Nicolau Syndrome after inadvertent intravenous adult-dose benzathine benzylpenicillin in a neonate.
A–B. Day 5 after the medication error: bilateral lower-extremity livedoid reticular purpura with coalescing hemorrhagic bullae and full-thickness skin loss; distal dry gangrene of multiple toes with circumferential eschar and demarcation at the ankle (right>left).
C. Extensive perineal/gluteal necrosis prompting a diverting colostomy. The infant had received an inadvertent **intravenous** injection of **2.4 million units benzathine benzylpenicillin (penicillin G)** formulated for intramuscular depot use (approximately an **800-fold** overdose for a neonate).

Abstract | Basic/Transactional Science | Plastic & Maxillofacial Surgery

Morphological study of the angular branch of the thoracodorsal artery and lateral border of the scapula: Future implications for reconstructive surgery

ER Lesser, J Pujol, J Bishop, J Rosbrugh, K Bubb, K Raeburn, B Barton, J Iwanaga, RS Tubbs, Tulane School of Medicine

Background: The angular artery is a branch of the thoracodorsal artery and is known to supply the inferior angle of the scapula. The lack of detailed anatomical research and clinical outcome studies hinders the ability to exploit the use of this artery and the bone it supplies. Addressing such knowledge gaps through anatomical studies and clinical trials will enhance the understanding and utilization of the angular branch in surgical practice, ultimately improving patient outcomes.

Objective: To investigate the extent of the blood supply of the scapula.

Methods: Seven sides (five left and two right) from six embalmed cadavers were used. The subscapular artery arising from the axillary artery was identified supine with the arm extended. The thoracodorsal artery was dissected under the surgical microscope to ascertain where they supplied the bone. Macroscopic and microscopic observation was conducted.

Results: The angular branch had a consistent course, traveling inferiorly on the lateral border of the scapula on six sides. Histological observation of the lateral border demonstrated blood cells within the trabeculae. In all specimens, the angular branch was found to have a clear continuation that supplied the inferior border; the lateral border was thicker than the medial border.

Conclusion: This anatomical knowledge will help plan future reconstructive surgeries. Innovation and refinement of surgical techniques for harvesting and utilizing grafts based on the angular branch are also crucial. Developing new surgical approaches and tools through collaboration between anatomists and surgeons, followed by clinical validation, will improve these procedures' efficiency and success rates—minimizing complications and enhancing patient recovery.

Case Report | Clinical Science | Plastic & Maxillofacial Surgery

Management of Non-Operative Pressure Injuries-Highly Charged Fiber Dressing, pHA, and collaborative multidisciplinary wound care

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Introduction/Objective: Clinicians face therapeutic obstacles in cases of stage 2-3 pressure injuries accumulating necrotic slough, where operative debridement is contraindicated. Instead, nonsurgical alternatives must be employed. A contemporary dressing combines electrostatic debridement and infection prevention, offering a streamlined alternative for these complex wounds. These dressings utilize electrostatic principles, employing negatively charged particles to target positively charged slough, enhancing removal. We present a case utilizing this dressing for a complex, non-healing PI.

Case Presentation: A morbidly obese male developed a shear-related wound dehiscence, due to decreased mobility, near the ischium following wide excision for severe left thigh and perineal hidradenitis suppurativa. The resulting fibrotic, pale wound feature rolled edges and significant slough accumulation, which remained unresponsive to negative pressure therapy and standard wound care approaches. The wound care regimen was revised to include hypochlorous acid soaks and the initiation of a charged silver fiber dressing

Discussion: This case demonstrates the efficacy of electrostatic silver fiber dressing in managing complex, nonoperative wounds with impaired healing and significant slough. These dressings offer a valuable single-platform solution, simultaneously addressing debridement, providing sustained antimicrobial activity via silver impregnation, and improving patient comfort with atraumatic removal, making this approach valuable for treating nonoperative pressure wounds.

Conclusion: Within two weeks of implementing the revised wound care regimen, the wound demonstrated marked improvement in appearance and the formation of granulation tissue. Serial wound assessments confirmed progressive improvement throughout the treatment course, without evidence of infection. This outcome demonstrates the effectiveness of electrostatic fiber dressings in managing complex, nonoperative wounds with impaired healing potential.

Case Report | Clinical Science | Plastic & Maxillofacial Surgery

Recurrent Groin Lymphocele Following Bilateral Rectus Femoris Flap Reconstruction

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Introduction/Objective: Lymphatic leaks represent complications following vascular surgery, contributing to delayed wound healing and increased patient morbidity and infection rates. Management includes conservative measures as well as operative techniques, such as lymphatic ligation and muscle flaps. Muscle flaps are frequently employed to obliterate dead space and demonstrate high success rates, reported at approximately 95%.

Case Presentation: A 60-year-old male with significant comorbidities, including peripheral artery disease, coronary artery disease, tobacco use, and alcohol dependence, presented with right lower extremity pain and bilateral thigh claudication. He subsequently underwent an open aortobifemoral bypass by vascular surgery, which was complicated by bilateral groin lymphoceles. His treatment course involved bilateral muscle flap reconstruction, intraoperative lymphatic channel localization using blue dye, advanced bipolar lymphatic vessel sealing, and incisional negative pressure wound therapy. Despite oral supplementation and intravenous total parenteral nutrition, his malnutrition persisted. At the two-month follow-up, distal perfusion remained intact, and the left lymphocele resolved, but a residual right noninfected lymphocele and malnutrition persisted.

Discussion: Adequate wound healing is contingent upon a patient's nutritional status. Chronic alcohol use and malnutrition are known to impede crucial physiological processes, including fibroblast maturation and collagen synthesis. This case illustrates that severe, persistent metabolic dysfunction can compromise the efficacy of robust reconstructive interventions, such as muscle flap coverage for groin lymphoceles.

Conclusion: This case highlights the importance of metabolic optimization when managing complex surgical patients. Persistent malnutrition can result in failure of otherwise reliable surgical reconstructions. Optimizing outcomes in this population necessitates a comprehensive, multidisciplinary approach to management.

Case Report | Clinical Science | Plastic and Reconstructive Surgery

Definitive Surgical Management of Chronic Draining Acne Keloidalis Nuchae with Local Tissue Transfer Reconstruction: A Case Report

Alexis Reviere, Laurel Adams, James Pai, Jessica Reid, Abigail Chaffin, LSU Health - New Orleans

Introduction/Objective: Acne keloidalis nuchae (AKN) is a chronic inflammatory disorder of the posterior scalp characterized by follicular papules, pustules, and keloid-like scarring [1,2]. In severe cases, persistent inflammation leads to draining sinuses, purulent discharge, and fibrosis, causing pain, alopecia, and cosmetic impairment [1]. Surgical excision with reconstruction provides definitive treatment by removing diseased tissue and minimizing recurrence [1,2].

Case Presentation: A 28-year-old male with a 5-year history of hidradenitis suppurativa (HS) presented with AKN and chronic draining purulent wounds. In 2022, the HS lesions were drained. He underwent excision of a 20 x 9 cm occipital mass with draining sinuses. Diseased skin and fibrotic tissue were resected while preserving underlying fascia. Enlarged occipital lymph nodes were excised for pathology. The initial plan was excision with partial closure and recycled grafting; however, the patient had greater skin laxity than expected. After galeal scoring, reconstruction was achieved using a posterior cervicocutaneous advancement flap measuring 20 x 6 cm. Progressive tension sutures reduced hematoma risk, obliterated dead space, and offloaded closure tension, followed by layered closure. Wounds were dressed with hypochlorous acid gel and silver foam for infection control and optimal healing.

Discussion: At the seven-week follow-up, the patient demonstrated complete resolution of drainage without wound complications and continued conservative wound management. Scalp contour and vascularity were excellent, and pain significantly improved.

Conclusion: Complete excision with local advancement provides both functional and aesthetic restoration in advanced AKN. This approach effectively eradicates chronic infected lesions while achieving durable, symmetric, and cosmetically favorable outcomes.

Case Report | Clinical Science | Thoracic Surgery

Thymic Epithelial Tumors: Where Classification Can Bemuddle Treatment

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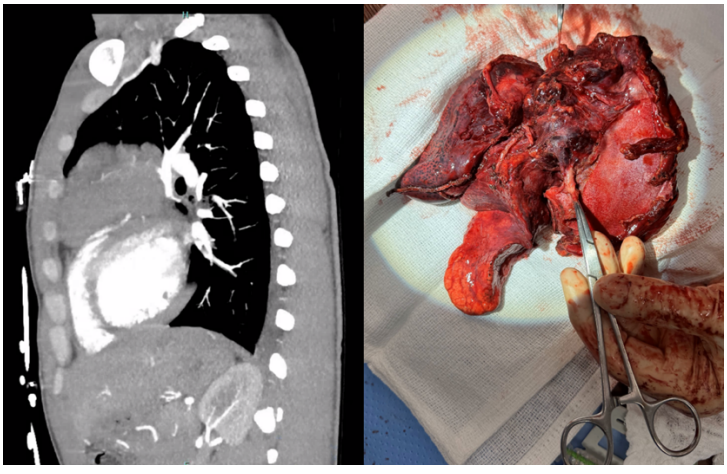
Introduction/Objective: The rarity of thymic epithelial tumors (TETs) and their diverse clinical manifestations have spurred much debate surrounding staging and treatment. We present the case of a patient with a TET that straddles this debate with a histopathologically indolent but clinically aggressive tumor.

Case Presentation: A 25-year-old male presented with shortness of breath and chest discomfort. CT demonstrated a lobulated anterior mediastinal mass tracking along the left hilum, abutting the left brachiocephalic vein. Biopsy suggested thymoma. The patient proceeds for resection via median sternotomy, considering the potential perivascular involvement. Intraoperatively, the mass abutted the left brachiocephalic vein and aortic arch but grossly invaded the pericardium and left upper lobe, and encased the phrenic nerve for 11 cm. The patient required resection en bloc with left upper lobectomy and pericardiectomy with division of the left phrenic nerve followed by bovine patch reconstruction and left diaphragmatic plication. Final pathology revealed an 11x9.5x4.5 cm invasive thymoma, type B2.

Discussion: TET presentations can be deceptively benign. Imaging may suggest tumor type, but all thymomas should be treated as malignant. There is a lack of predictive value associated with their histological morphology; Invasion and stage better indicate outcomes. Our patient was pathologically diagnosed as AJCC Stage II, T2N0; however, he is better represented by Masaoka Stage IIIa, AJCC Stage IIIa, T3N0, considering nerve involvement.

Conclusion: In this case, a large thymoma was found to be a rapidly growing, invasive tumor more classically indicative of thymic carcinoma. The potentially aggressive nature of these tumors should not be underestimated when evaluating TETs.



Case Report | Clinical Science | Transplantation Surgery

Phlegmasia Cerulea Dolens Secondary to Iliac Vein Compression from Post-Transplant Hematoma Despite Anticoagulation: A Case Report

T Lim, G Parkerson, J Barr, UQ Ochsner

Introduction/Objective: Phlegmasia cerulea dolens represents the extreme end of the deep vein thrombosis spectrum, characterized by extensive venous occlusion, limb swelling, cyanosis, and pain as the loss of outflow eventually compromises arterial inflow (1). Although rare, the condition carries significant risk for limb ischemia and death if not promptly recognized and treated (2,3). In the context of kidney transplantation, the incidence of thrombotic events such as PCD is heightened due to complex alterations in the hemostatic system, which include both prothrombotic and hemorrhagic tendencies. These changes are driven by pre-existing end-stage kidney disease, perioperative factors, and the effects of immunosuppressive therapy (4,5). The very nature of the operation, including clamping the renal vein and possible venous compression by retractor blades further elevates the risk.

Kidney transplant recipients with underlying hypercoagulable disorders face unique challenges due to the need for perioperative anticoagulation, which increases bleeding risk while failing to protect fully against thrombotic events. We present a case of PCD in a high-risk renal transplant recipient with a known methylenetetrahydrofolate reductase mutation. MTHFR mutations in are associated with an increased risk of venous thromboembolism through disruption of folate and homocysteine metabolism, resulting in elevated homocysteine levels (6,7). Hyperhomocysteinemia shifts the hemostatic balance toward thrombosis by directly damaging endothelial cells, increasing oxidative stress by reducing nitric oxide bioavailability, activating factor V and factor XII, impairing protein C and antithrombin, and inhibiting fibrinolysis (8,9).

To our knowledge, this is only the second reported case of PCD occurring in a post-kidney transplant patient.

Case Presentation: A 49-year-old woman with end-stage renal disease secondary to focal segmental glomerulosclerosis underwent deceased donor renal transplantation. Her medical history was notable for hypertension, multiple prior pulmonary emboli, deep vein thromboses, and a known MTHFR mutation. She was maintained on therapeutic enoxaparin prior to transplant, having previously developed pulmonary emboli on coumadin and apixaban. She had no relevant surgical history. The kidney, procured from a brain-dead donor with a kidney donor profile index of 16%, was sewn to the right external iliac artery and vein in the standard retroperitoneal position. Cold ischemia time was 1009 minutes, and warm ischemia time was 28 minutes, for a total of 1037 minutes. A Lich neoureterocystostomy provided bladder drainage. Her operative and post-operative course were largely unremarkable. Hematology guided her anticoagulation management, and she was converted from a bridging heparin drip back to enoxaparin on post-operative day 3. She was discharged on post-operative day 4 with a functioning graft and no evidence of

bleeding.

Three days post-discharge, she presented with severe right lower quadrant pain and near-syncope. Her vital signs were stable without hypotension or tachycardia. Examination revealed abdominal tenderness and distension, along with a 5x10cm tender nodular mass over the right upper gluteal and lower lumbar region without skin changes. The transplant incision site was non-erythematous and without drainage. Initial labs revealed white cell count (WCC) of 13.32 K/uL, hemoglobin of 9.0 g/dL, and a hematocrit of 27.7%, compared to post-transplant discharge values of WCC of 6.79. K/uL, hemoglobin of 11.0 g/dL, and hematocrit of 33.7%. CT without contrast revealed a large subcutaneous and perinephric hematoma. She underwent urgent surgical evacuation of the hematoma without evidence of active bleeding.

Subsequently, she developed right lower extremity swelling, stiffness, and discoloration concerning for phlegmasia cerulea dolens. Ultrasound confirmed acute DVT in the right common femoral and proximal greater saphenous veins, prompting re-initiation of heparin. Vascular surgery performed an emergent endovascular suction thrombectomy in prone position through ipsilateral popliteal vein access. Intraoperative venogram demonstrated thrombus extending into the right common femoral vein and apparent occlusion of the common iliac vein. Subsequent intravascular ultrasound revealed extrinsic compression of the external and common iliac veins by a new perinephric hematoma. Of note, the renal vein was patent and draining through the internal iliac vein. Following thrombectomy, significant venous compression persisted, necessitating a second exploration and hematoma evacuation after which she was left open.

She was again brought back to the operating room several hours later for a third exploration for bleeding due to supratherapeutic Factor Xa levels. Her PCD symptoms began to improve quickly after initial thrombectomy and hematoma evacuation. Two days later, a final exploratory laparotomy found no significant hematoma or active bleeding, and her incision was closed. Repeated exploration demonstrated a generally well-perfused kidney without diffuse retroperitoneal ooze and no issues with the anastomoses.

Cultures from the first evacuated hematoma later grew methicillin-resistant Staphylococcus epidermidis, Staphylococcus hominis, and Enterococcus faecium. The patient was treated with a 14-day course of linezolid. Despite these complications, the renal allograft remained viable, and she only required a single session of dialysis for acute kidney injury. Her GFR on discharge from her first hospital stay was 39 mL/min/1.73/m2; after this admission, it was 19 mL/min/1.73/m2.

Discussion: This is the second reported case of phlegmasia cerulea dolens in a kidney transplant patient. While PCD is rare, venous thromboembolism (VTE) is quite common.

VTE risk is increased by factors such as malignancy, surgery and subsequent decreased mobility, central venous catheters, and immunosuppressive therapy, while bleeding risk is heightened by perioperative factors, thrombocytopenia, platelet dysfunction due to ESRD, and the use of anticoagulation (10,11). Intraoperative variables, such as surgical

manipulation of the iliac vessels and surrounding tissues, can cause endothelial injury, which, when combined with a pre-existing hypercoagulable state, increases the risk of thrombosis (12,13). Additionally, prolonged operative time and immobility during surgery contribute to venous stasis, compounding the risk of DVT (14).

In kidney transplant patients, the risk of DVT is markedly higher than in the general population, with cumulative incidences of 2.7% to 8.3% within the first 6 months, peaking in the first month post-transplant (13,15,16). By comparison, venous thromboembolism occurs in 0.5-3% of patients within 90 days of other high-risk surgeries (major abdominal, pelvic, or oncologic); orthopedic patients experience DVT rates of 1.2-2.5% within 90 days despite prophylaxis (17-19). Progression from DVT to PCD is uncommon, representing only a small fraction of thrombotic events.

PCD is a clinical diagnosis with massive limb swelling and pain as common presenting features, while cyanosis is pathognomonic. Duplex ultrasonography or CT with IV contrast may aid diagnosis but is not required. As the disease progresses, bullae and venous gangrene may develop. PCD most commonly involves thrombosis of the iliac and common femoral veins. Initial management includes limb elevation and fluid resuscitation to improve venous return, but many patients require more definitive therapy with catheter-directed thrombolysis, endovascular thrombectomy, and, rarely, open thrombectomy with ongoing anticoagulation. The decision to undergo thrombolysis or thrombectomy (endovascular versus open) depends on the extent of the thrombus, presence of venous gangrene, and refractory thrombosis despite anticoagulation (20). Without immediate identification and treatment, prognosis is poor with mortality rates of 20-40% (21). Prevention strategies mirror those for DVT and include pharmacologic prophylaxis, mechanical measures such as sequential compression devices and leg elevation, adequate hydration, and early mobilization.

To our knowledge, no studies have quantified the incidence of PCD in kidney transplant recipients, and only one case report has been published. In 1995, Killewich et al. described a patient who developed PCD involving the bilateral external and common iliac veins and the left femoral vein five months after kidney transplantation, which was successfully treated with urokinase, resulting in allograft preservation (22). In contrast, our patient developed PCD acutely within one week of transplantation, and the process was unilateral, precipitated by extrinsic compression from recurrent perinephric hematomas in the setting of a hypercoagulable state. Since our patient was within thirty days of major surgery (and had recurrent perigraft hemorrhage), she had absolute contraindications to thrombolytic therapy. Instead, she underwent venogram, intravascular ultrasound, and endovascular thrombectomy, which was both diagnostic and therapeutic. While both cases achieved graft salvage, our patient experienced a decline in renal function, highlighting the potential for partial but not complete recovery at discharge. We postulate that the patient's transplanted kidney survived despite extensive surrounding thrombosis because outflow was maintained through retrograde cross-pelvic flow through the internal iliac vein, and prompt suction thrombectomy and therapeutic anticoagulation prevented complete occlusion.

This case adds to the limited literature describing phlegmasia cerulea dolens in kidney

transplant recipients and highlights the complex interplay between thrombosis and bleeding in this population.

Conclusion: This case represents only the second described case of phlegmasia cerulea dolens in a kidney transplant patient. It emphasizes the importance of early recognition and prompt intervention for phlegmasia cerulea dolens, particularly when anatomical factors such as hematomas create venous outflow obstruction. Careful multidisciplinary assessment and individualized management are essential to optimize outcomes in this high-risk population.

Case Report | Clinical Science | Trauma/Burn/Critical Care

Correcting Trauma Associated Coagulopathy With Prothrombin Complex Concentrate

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Introduction/Objective: Approaching an unstable traumatic hemorrhagic shock patient warrants consideration of causes of coagulopathy. Several targeted reversal agents are available. Given its rapid efficacy, prothrombin complex concentrate is valuable in trauma patients for reversal of coagulopathy.

Case Presentation: A 41-year-old male was brought to the ER for multiple gunshot wounds to the thorax and upper extremities. He received PRBC and TXA by EMS. On arrival, bilateral chest tubes were placed for hemothorax, and he was taken to the OR. He had liver laceration, injury of the duodenum, right radial artery transection, and multiple injuries to his upper extremities.
After the index surgery, he developed ARDS requiring VV-ECMO. He required additional surgeries in the following days. With worsening coagulopathy, reaction times (R-time) greater than 17 seconds on TEG, he received two round of plasma exchange for traumatic endotheliopathy and coagulopathy but continued to have significant bleeding from surgical sites. Due to blood product shortage, decision was made to switch to a factor-replacement strategy, with administration of KCentra 14 units/kg. Repeat TEG demonstrated an improvement in R-time, and a second dose of Kcentra was given, demonstrating a complete resolution of the coagulopathy with R-time of 9.3 seconds without any further transfusions for 24 hours.

Discussion: Coagulopathy and endotheliopathy causes are vast and not widely understood. With targeted reversal agents available, use of these agents during blood product shortages should be considered. Our patient received multiple treatments for his coagulopathy without improvement until KCentra was given. These prothrombin complex concentrates may benefit other underlying coagulopathies.

Conclusion: Coagulopathy and endotheliopathy causes are vast and not widely understood. With targeted reversal agents available, use of these agents during blood product shortages should be considered. Our patient received multiple treatments for his coagulopathy without improvement until KCentra was given. These prothrombin complex concentrates may benefit other underlying coagulopathies.

Abstract | Clinical Science | Trauma/Burn/Critical Care

The Use of Multiple Modalities for Limb Salvage Due to Severely Infected Wounds: A Case Study

Ross Jacobson, MBA, Rachel Garner, James Pai, Jessica Reid, MS, Joshua Dickerson, MD, Molly Gaffney, BS; Laurel Adams, BS, Abigail Chaffin, MD, FACS, CWSP, MAPWCA, Tulane School of Medicine

Background: A 62-year-old female with diabetes and hypertension presented with a severely infected circumferential venous ulceration of the right leg. Prior treatment at another facility included collagenase for debridement intolerance. On presentation, she exhibited severe cellulitis and edema. Cardiology evaluated her for a possible STEMI and advised amputation. However, once she was cleared by Cardiology, plastic surgery proposed limb salvage, as her foot was sensate with adequate arterial inflow.

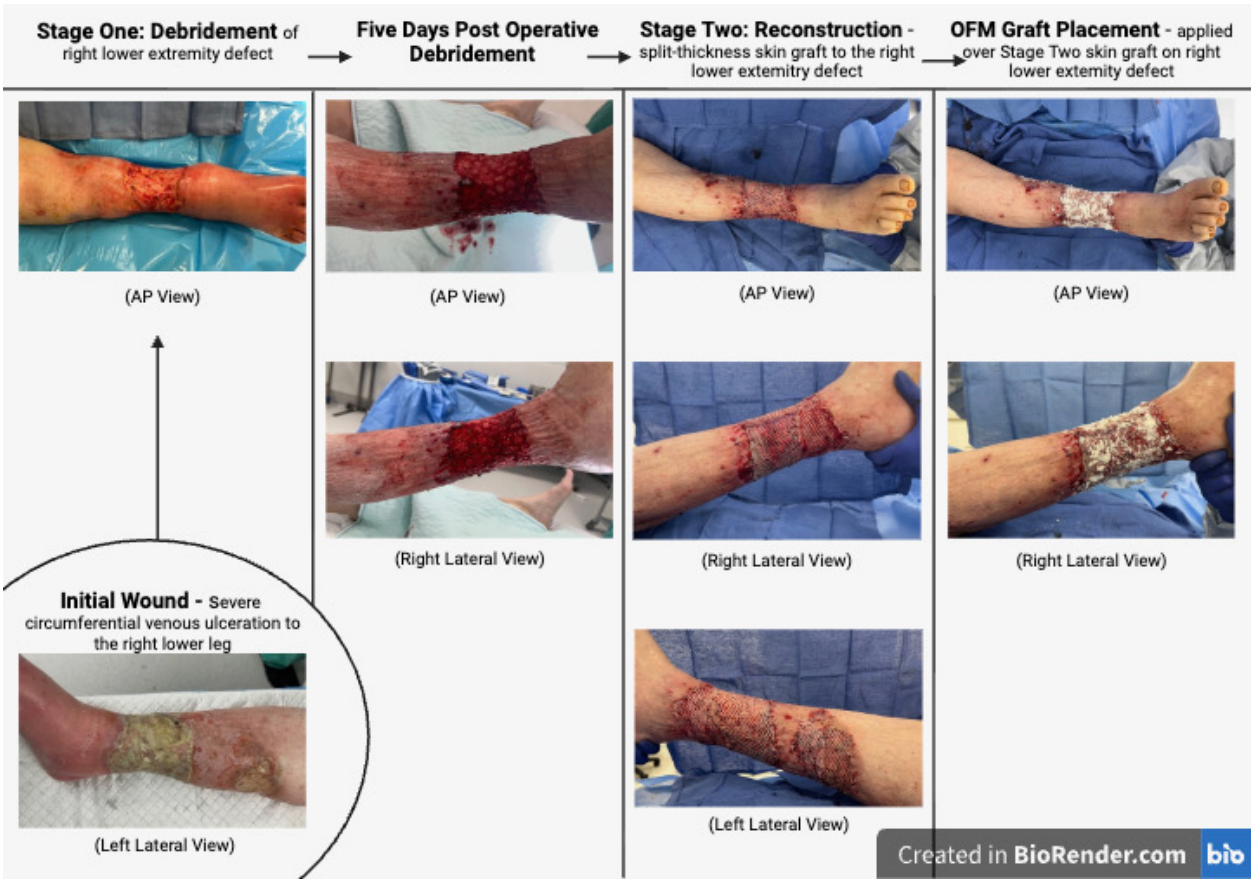
Objective: Lower extremity venous ulcers in diabetic patients with comorbidities present a multifactorial clinical challenge, often requiring amputation. This is particularly problematic in diabetic patients, where impaired wound healing and systemic complications, due to reduced mobility, exacerbate outcomes.The 5-year mortality rate for below-knee amputations (BKA) in diabetics is alarmingly high at 40–70%, compared to 30–50% in the general population. This case report explores the use of plastic surgical and wound management strategies to avoid amputation in complex wound cases.

Methods: Amputation in severe lower limb infections, particularly in diabetic patients, involves substantial risks due to systemic complications, underscoring the importance of a collaborative approach to enhance wound healing and prevent amputation. In this case, the multimodal treatment plan included surgical and ultrasonic debridement with pure hypochlorous acid (PHA) irrigation solution, followed by the application of negative pressure wound therapy with instillation and dwell time. A split-thickness skin graft and ovine forestomach matrix (OFM) graft were then subsequently placed.

Results: 90% take of skin graft at 2-week post-op follow up. Patient was admitted to LTACH for ongoing wound care. Treatment with negative pressure wound therapy, PHA solution, and compression wraps. Full resolution of cellulitis and edema. Patient has had ongoing wound care treatment and is nearly completely healed with no complications or signs of infection at 3 month follow up.

Conclusion: By the three-month follow-up, the patient's wound was nearly completely healed with no signs of complications or infection. This case highlights the potential benefits of intraoperative PHA solution, combined with multiple wound care strategies, for improving patient outcomes in critical limb salvage.

Pictures on next page


Stage One: Debridement of right lower extremity defect
Five Days Post Operative Debridement
Stage Two: Reconstruction - split-thickness skin graft to the right lower extremity defect
OFM Graft Placement - applied over Stage Two skin graft on right lower extremity defect
(AP View)
(AP View)
(AP View)
(AP View)
(Right Lateral View)
(Right Lateral View)
(Right Lateral View)
Initial Wound - Severe circumferential venous ulceration to the right lower leg
(Left Lateral View)
(Left Lateral View)
Created in BioRender.com

Case Report | Clinical Science | wound care

Novel Breast-Reduction Based Technique as a Curative Approach for Chronic Nonhealing & Fibrotic Bilateral Breast Wounds with Chronic Mastitis: A Case Report

Alexis Reviere, Laurel Adams, James Pai, Jessica Reid, Noura Mohamad Jawhar, Abigail Chaffin, LSU Health - New Orleans

Introduction/Objective: Recurrent subareolar abscesses, frequently seen in nonlactating women, pose a significant therapeutic challenge due to chronic inflammation, sinus tract formation, and persistent recurrence despite conservative management, including repeated drainage and antibiotic therapy [1,2]. We present a novel breast reduction–based amputation technique intended to definitively eradicate chronic subareolar inflammatory disease while improving breast aesthetics.

Case Presentation: A 45-year-old female with severe macromastia presented with recurrent draining abscesses and fibrotic tracts involving the bilateral nipple-areolar complexes and periareolar breast tissue. The disease was confined to the nipple–areolar and adjacent regions, sparing the inframammary fold, distinguishing it from hidradenitis suppurativa. Histopathology revealed nonspecific chronic inflammation without granulomatous features. Definitive surgical management involved complete excision diseased tissue, preservation of a central pedicle to maintain breast projection, and closure using a deepithelialized 26 x10 cm segment advanced in Wise pattern closure to restore contour and symmetry. Drains were placed bilaterally, and complete closure was achieved with excellent perfusion and breast aesthetics.

Discussion: At four-week postoperative appointment, patient was healing well with no major wound complications or infections and continuing conservative wound management. The procedure preserved breast symmetry and contour while successfully eliminating fibrotic tracts and infected tissue. This technique demonstrates the utility of plastic surgical methods to manage complex, refractory inflammatory breast disease [1,2].

Conclusion: This case illustrates the effective adaptation of a breast reduction–style amputation technique for chronic subareolar abscesses. The method addresses tunneling, scarring, and biofilm-associated recurrence in chronic inflammatory breast disease, representing a novel reconstructive strategy for persistent and complex breast pathologies.