CR01. A new twist on an old trick: the use of MAAB soaks to treat angioinvasive Fusarium

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Background: Fusarium spp. is an opportunistic fungus with variable susceptibility to antifungals that can cause localized skin and soft tissue infection and potentially spread hematogenously with high mortality in the immunocompromised. In this paper we describe the successful treatment of angioinvasive Fusarium with topical mafenide acetate-Amphotericin B (MAAB) via irrigating negative pressure wound therapy (NPWT) device. Our patient is a 59 year-old wheelchair bound African American male with history of controlled diabetes, hypertension, atrial fibrillation, and new diagnosis of COVID-19 presenting with generalized weakness and diffuse, coalescing bullae over bilateral lower extremities. Duplex scan showed deep venous thrombosis of bilateral femoral and popliteal veins suggesting venous stasis potentiating wound formation. Despite local wound care, wound severity progressed to circumferential skin sloughing with underlying woody appearance of the dermis to the level of the knees. He underwent multiple operative debridements with findings of extensive full thickness skin/soft tissue necrosis and thrombosed superficial veins. Cultures isolated various bacterial species treated with systemic antibiotics and Fusarium spp. Due to extensive and progressive soft tissue injury we performed bilateral above knee guillotine amputations. Pathology revealed angioinvasive fusarium and fungal blood cultures were negative suggesting no hematogenous spread. Susceptibility testing showed resistance to itraconazole, posaconazole, and voriconazole and he was started on Amphotericin B. Unfortunately, after two days of therapy he developed an acute kidney injury and was transitioned to intravenous isavuconazonium, to which his Fusarium was later found to be resistant. His wounds continued to grow Fusarium after repeat debridements so we initiated MAAB soaks via an irrigating NPWT device to ensure continuous tissue contact. After a month, biopsy culture showed no Fusarium growth. Soaks continued for an additional two months with clinical resolution of Fusarium and no systemic signs of infection. In conclusion, extensive cutaneous Fusarium infection in an immunocompetent host is a rare clinical disease and we hypothesize phlegmasia secondary to COVID 19 had an important role in this patient. We found that early surgical intervention and wound care using MAAB soaks with an irrigating NPWT device resulted in resolution when systemic antifungals were not an option.

CR02. Anaplasmosis Mimicking Acute Cholecystitis

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Background: Introduction: Anaplasmosis is a tick-borne Rickettsial disease caused by Anaplasma Phagocytophilum, an obligate intracellular gram-negative bacterium transmitted via the Ixodes Scapularis tick. Most prevalent in the east coast states, the incidence has increased ten-fold in the last two decades. (1) Treatment is with doxycycline, although the diagnosis is often delayed because the presenting symptoms mimic those of more common illnesses.

Methods: Case: A 60 year old male with a history of atrial fibrillation, GERD, and hypertension presented with five days of severe right upper quadrant abdominal pain radiating to his back, nausea, fever, chills, malaise, and dark urine. His laboratory studies revealed pancytopenia, transaminitis, and hyperbilirubinemia. Imaging studies demonstrated a nondistended gallbladder with wall thickening, pericholecystic fluid, porta hepatis inflammation, and a normal sized common bile duct without stones. Hepatobiliary scan was not performed as the radiotracer is not available on weekends. A combined surgery/radiology consult suggested a disseminated, possibly tick-borne, infection. Infectious disease started empiric antibiotic therapy, and serologies eventually returned positive for

Anaplasma Phagocytophilum. He recovered quickly from his illness and was discharged home.

Conclusions: Discussion: Anaplasma phagocytophilum targets host granulocytes, upregulating proinflammatory cytokines while simultaneously inhibiting neutrophil antimicrobial function. (3,4) While anaplasmosis typically causes self-limiting symptoms such as fever, chills, nausea, headache and myalgias, antibiotics should be started with suspicion of this tickborne illness as severe complications have been reported, including ARDS, coagulopathies, neuropathies, pancreatitis, rhabdomyolysis, and acute renal failure. Severe pancytopenia and transaminitis are characteristic laboratory findings. (2) Diagnosis during the acute stage is by PCR. As there are high rates of co-transmission with other Rickettsial diseases, serology should cast a wide net. (3) Treatment is with Doxycyline. The course of this patient, who was transferred urgently with a diagnosis of acute cholecystitis, demonstrates the importance of a detailed history, familiarity of seasonal tickborne illnesses, and a high suspicion in patient with acute illnesses after outdoors exposure in areas endemic to Rickettsial diseases.

CR03. Successful non-surgical management of isolated hepatic mucormycosis

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Background: Isolated hepatic mucormycosis without other organ involvement is very rare among solid organ transplant recipients and is associated with poor prognosis. Often a combination of surgical and antifungal treatment is required. We present a successful case of non-surgical management of isolated hepatic mucormycosis after a kidney transplant.

Results: A 46-year-old male with end stage renal disease secondary to diabetes mellitus and hypertension received a kidney transplant with uneventful immediate post-operative course. He recieved depleting antibody induction followed by maintenance immunosuppression regimen of tacrolimus, mycophenolate and prednisone. Two months post transplant, patient presented with fever, abdominal pain and elevated liver function tests. CT abdomen showed 5 cm x 5 cm abscess in the inferior right hepatic lobe and 7 cm x 7 cm abscess in the dome of right hepatic lobe. Broad spectrum antibiotics were started and percutaneous drains were placed into these abscesses. Drain cultures grew Mucor species. Patient was started on intravenous liposomal amphotericin B and mycophenolate was discontinued. However, despite a week of intravenous amphotericin B therapy, patient remained febrile. So trans-catheter administration of amphotericin B through the percutaneous drains with 30 minutes of dwelling time for a total of 14 days was initiated with significant clinical response with fever resolution and normalization of liver function tests. Intravenous amphotericin was continued for a total of 30 days followed by oral posaconazole for a total of 3 months. Follow-up CT showed interval resolution of hepatic abscesses. Patient is now three years post transplant with normal renal function and no recurrence of mucormycosis.

Conclusions: Mucormycosis especially isolated hepatic involvement in solid organ transplant recipients is very rare but can lead to significant morbidity and mortality. In cases where surgical debridement is difficult or contraindicated, percutaneous drainage and trans-catheter administration of amphotericin B can be an option along with lowering immunosuppression for transplant and prolonged course of systemic antifungal therapy.