Septic Ankle Joint of Unknown Cause in a Pediatric Patient

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Format: Case Study Length of Follow Up: 12 Months Level of Evidence: IV





PURPOSE AND LITERATURE REVIEW

Septic joints have been described in the literature with known infectious causes secondary to direct inoculation, contiguous spread, and hematogenous spread. Septic arthritis can be detrimental to a pediatric patient due to joint destruction, possible osteonecrosis, and physeal damage caused by the infection (1-3). Most septic joints have a known cause, primarily from a microorganism, such as Staphylococcus aureus, both resistant and sensitive to methicillin. Other common causes of septic arthritis found throughout literature include Kingella kingae, Streptococcus pneumonia, Haemophilus influenza, and Neisseria gonorrhea. Within the pediatric population, clinical presentation varies. The most common symptoms include fever, pain, edema, erythema, and limited joint use. A complete blood count with differential, erythrocyte sedimentation rate, c-reactive protein, blood cultures, plain radiographs, advanced imaging such as MRI, ultrasound, and arthrocentesis can all aid in the diagnosis of septic arthritis. The treatment of a septic joint consists of surgically draining the infected joint via arthrotomy and beginning intravenous antibiotic therapy. While an open arthrotomy has shown to be the most effective way of draining and decompressing a joint, there have been successful outcomes with cases utilizing an arthroscopic approach. Literature have shown an antibiotic regimen consisting of a short course of IV followed by an oral route proves to be most effective at reducing infection The gram stain, aerobic culture, and anaerobic culture taken during surgery had no growth over limited literature regarding septic joints in pediatrics. Within the pediatric population, clinical epithelium, benign. These results are indicative of a sterile abscess. presentation varies. As with adults, the most common symptoms include fever, pain, edema, erythema, and limited joint use. To our knowledge, there is no literature reporting on a case involving a pediatric patient with a sterile septic ankle joint. The following case study presents a pediatric patient with a septic ankle joint from an unknown cause.

CASE STUDY

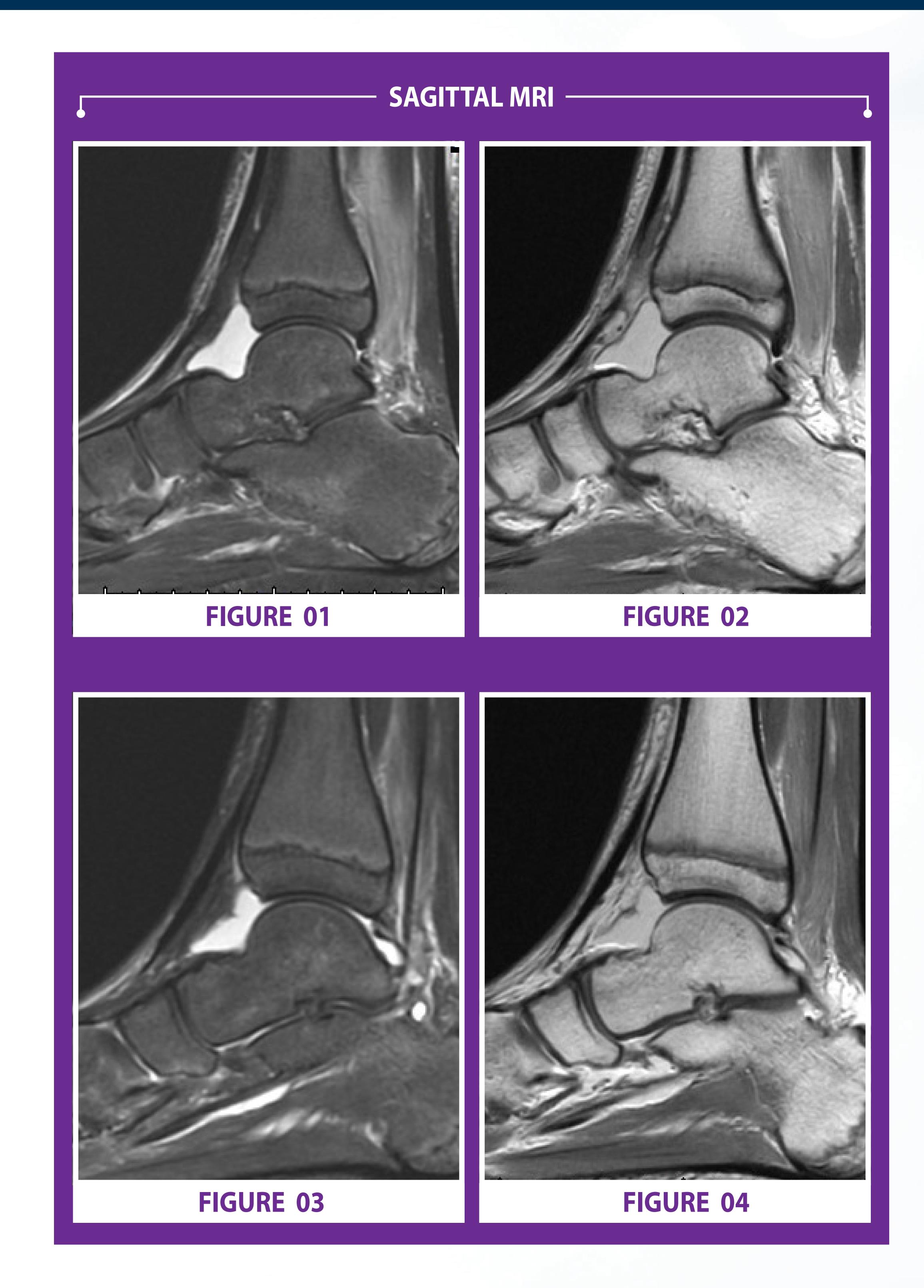
ankle joint. He was unable to bear weight due to pain. The patient was placed in a walking boot, successful outcome. but he was instructed to remain non-weightbearing to the left extremity. He was encouraged to ice the ankle and take anti-inflammatories as needed. Despite scheduling a two week follow up, he returned to our clinic the following day febrile with increased pain throughout his ankle. He admitted to unbearable pain that prevented him from sleeping the night before. On physical exam, he had severe pain with palpation over the ankle joint and severe pain with active and passive range of motion of the ankle joint. The ankle had become more edematous compared to the previous day. There were still no open wounds noted upon follow up. An MRI with/without contrast was performed and revealed increased signaling throughout the joint consistent with a sub-periosteal abscess and moderate sized joint effusion and possibly indicating a septic joint. The patient was admitted to the hospital that same day. He then underwent an initial

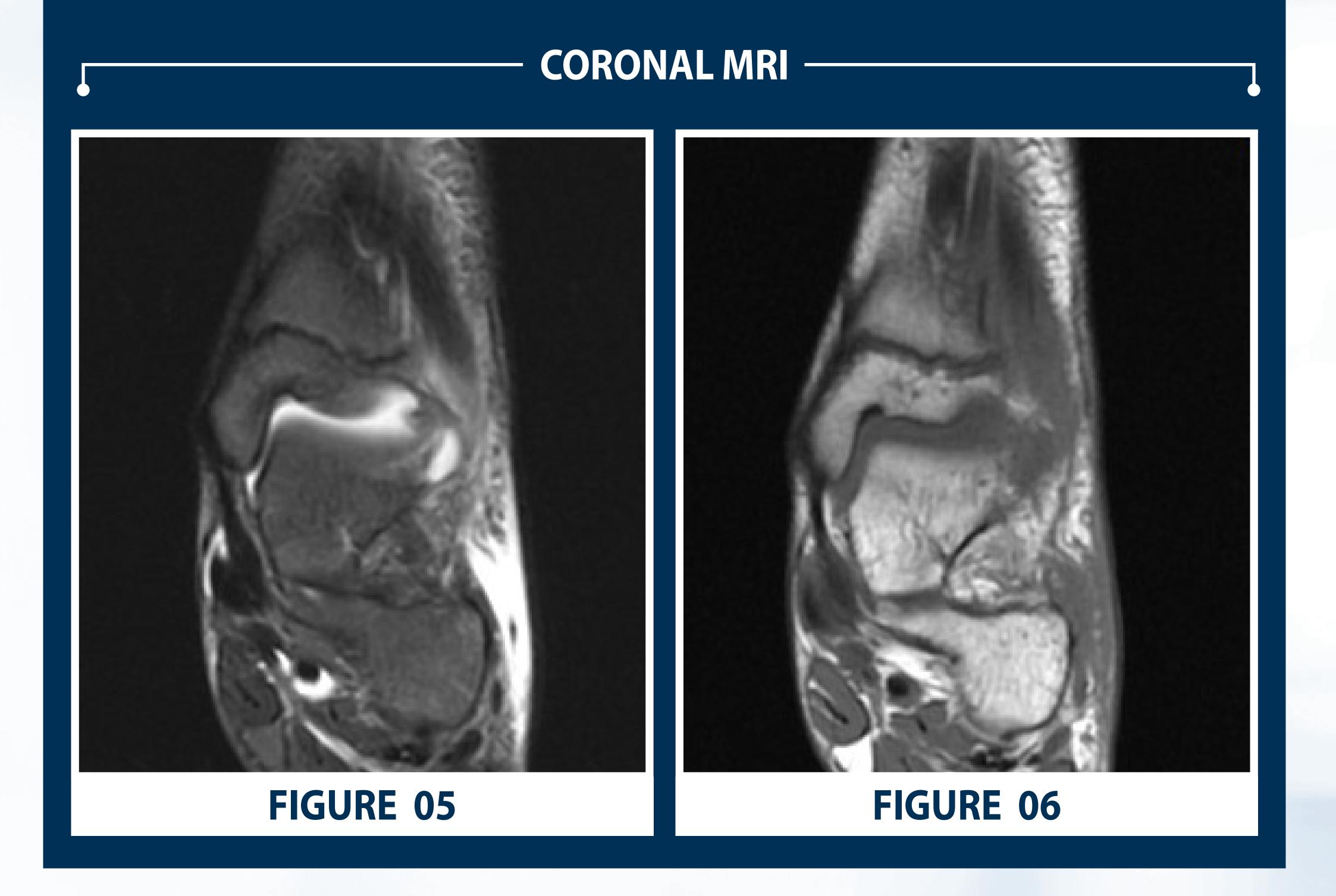
incision and drainage with an open arthrotomy. The patient had an anterolateral incision over the ankle joint, and deep tissue dissection was carried out down to the level of the ankle capsule, which was noted to be very edematous and taut. At this point, the joint capsule was incised. Frank purulence, as well as serosanguinous drainage, was noted. Cultures were taken of this and sent to microbiology for aerobic and anaerobic cultures. The ankle joint was thoroughly rigated and with all purulent drainage removed. The ankle was then thoroughly irrigated while dorsiflexing and plantarflexing the ankle joint. Two days later, he underwent a second incision and drainage. No purulent drainage was able to be expressed, no defects in the articular cartilage, and the surrounding tissue appeared healthy. After delayed primary closure, the ankle joint was taken through range of motion exercises, and there were no restrictions noted. The patient was subsequently discharged from inpatient status. At his outpatient follow up 3 days later, his pain had improved significantly and he was able to bear weight on the operative limb with crutch assistance. He then progressed over the next two weeks and resumed his normal activities. There was not a recurrence of his symptoms.

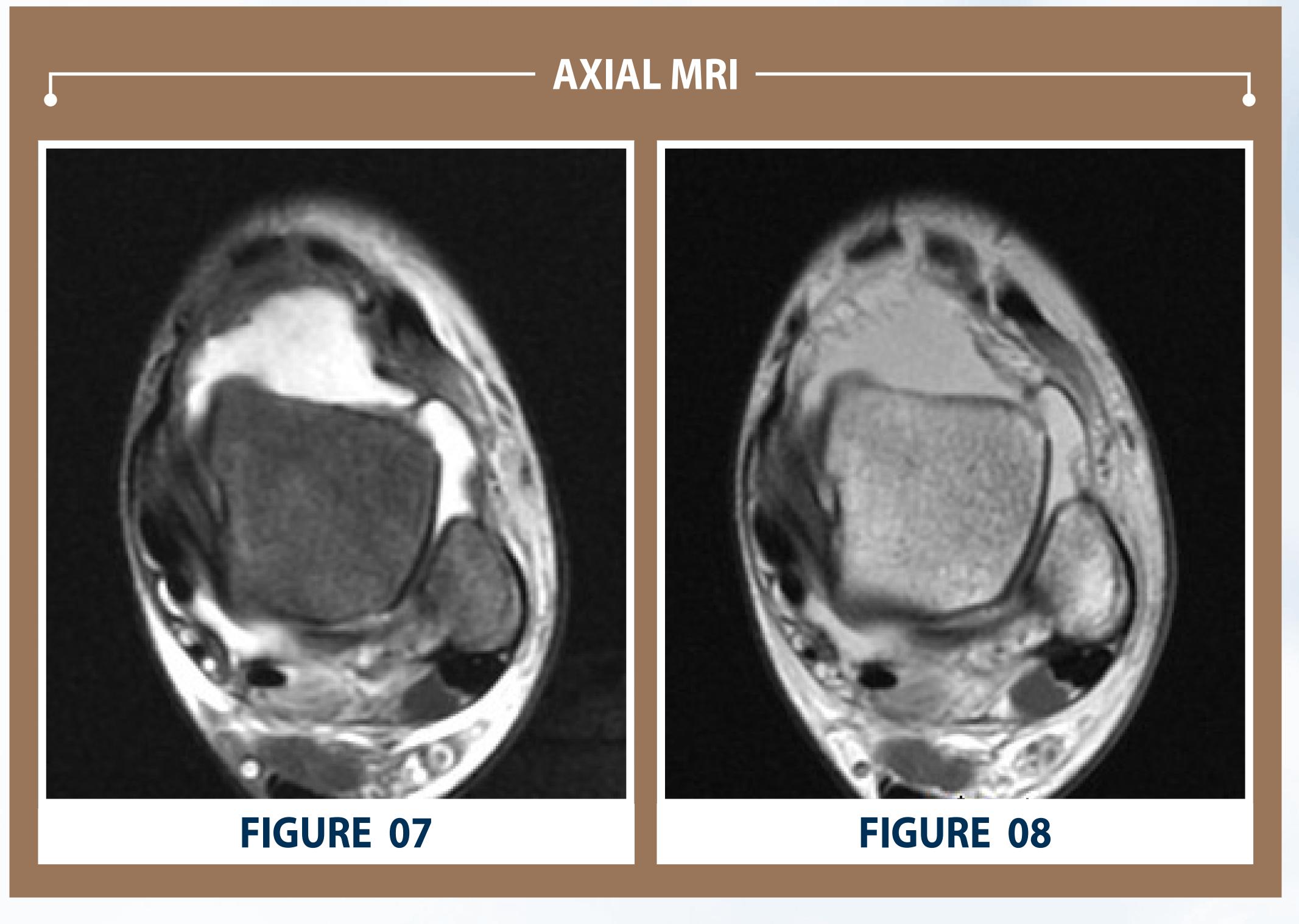
rates, providing a most desirable outcome. It has also been stated within literature that adding 5 days. The acid-fast bacilli smear taken was negative, and it had no growth over 6 weeks. The a small dose of steroid along with the antibiotics improves the overall outcome (1,3). There is tissue biopsy of the ankle joint capsule sent to pathology came back as ulcerated squamous

Septic joints, including but not limited to the pediatric population, have been described throughout literature with known causes from various microorganisms. It can be detrimental to the pediatric joint if not treated appropriately. In a study by Al Saadi et al., 100% of the people who received an MRI in screening for septic joint was positive (2). Open arthrotomy is considered An 11-year-old patient with no pertinent past medical history initially presented to clinic with this gold standard in surgical intervention, and in our case, proved to be successful in resolving pain in his left ankle for a duration of 3 days. He denied any injury and any recent travel outside or the problem. A recent study by Thompson et al. evaluated the effectiveness of arthroscopic inside the country, any history of wounds, or any constitutional symptoms of infection. On physical treatment for a septic joint in the pediatric population. In a sample size of only 24, they utilized exam, there was minimal edema about the ankle with no ecchymosis or open wounds. He had a successful resolution of symptoms with only two needing severe pain on palpation to the left ankle joint, and he had pain with active and passive range further surgical intervention (4). In our case, we utilized an MRI to confirm clinical suspicion of motion of his ankle joint. There was no pain with palpation noted proximally or distally to the and proceeded to perform an open arthrotomy. Our approach offered great visualization and a

This case study details the clinical and surgical findings as well as the pathological and microbiological results in a pediatric patient diagnosed with a sterile septic ankle joint. There is no existing report describing the atypical presentation and atypical findings throughout the surgical and post-operative course. The goal of this case is to not only bring light to a topic less prevalent in the literature, but to also discuss an effective approach to the sterile septic joint in the pediatric population.







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