CASE REPORT

Don't put your foot in it: a case of talonavicular septic arthritis

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SUMMARY

We present the second documented case of primary septic arthritis of the talonavicular joint. This patient had a number of medical comorbidities, including chronic widespread pain including the ipsilateral limb, which made diagnosis an even greater challenge. Although a clinical diagnosis, joint fluid aspiration remains the gold standard. Prompt surgical drainage with adjuvant antibiotic treatment is recommended, and management requires a multidisciplinary team approach. The aim of treatment is to avoid the sequelae of joint destruction, pain and foot deformity.

BACKGROUND

Isolated septic arthritis of the talonavicular joint is extremely rare, with only one previously reported case in the literature in an adult¹ and one in a child.² We report a case of a 59-year-old female patient, with interesting learning points on diagnosis, treatment and prognosis.

Septic arthritis is a differential diagnosis in any monoarticular arthritis. It most commonly occurs in the hip, knee and ankle. Small joints in the foot are seldom affected. Infection can occur via haematogenous spread, direct inoculation or adjacent infection. When septic arthritis is suspected, joint aspiration must be considered for confirmation. The presence of other conditions such as chronic degenerative or inflammatory joint disease, psychological comorbidity or the presence of chronic pain

can cloud the presentation. Rare conditions such as this are difficult to diagnose, and a high index of suspicion is required. Treatment requires surgical drainage in a timely fashion with appropriate adjuvant antibiotic therapy, to prevent articular cartilage destruction.

CASE PRESENTATION

A 59-year-old woman attended her local A+E department with acute onset of diffuse left foot and ankle pain and swelling, during an episode of household cleaning that involved kneeling down. There was no history of injury. She has a background history of polymyalgia rheumatica, degenerative lumbar spine disease with left L5 nerve root compromise and chronic widespread pain particularly in back and left lower limb, previous breast cancer and severe generalised anxiety disorder/hospital phobia. Her medication was prednisolone 1 mg alternate days, pregabalin 200 mg three times a day, paracetamol 1 g prn, naproxen 500 mg two times a day, bisoprolol 2.5 mg one time a day and omeprazole 20 mg two times a day.

INVESTIGATIONS

Plain radiographs were unremarkable and she was discharged with anti-inflammatory analgesia. She re-presented a week later due to ongoing pain and erythema. This prompted blood analysis demonstrating an elevated C reactive protein (CRP) of 48 mg/L, a normal white cell count and an ultrasound scan (USS) which showed only soft tissue inflammatory changes around the medial malleolus.

A provisional diagnosis of gout or inflammatory arthropathy was made, and she was treated with colchicine and a 5-day course of oral prednisolone. Despite treatment, her symptoms worsened. She then contacted her tertiary hospital, her rheumatology clinic appointment was expedited and she was seen 4 weeks after the onset of her symptoms. It was noted that she was unable to bear weight on the left foot and was in severe pain. Repeat blood tests showed a CRP of 10 mg/L, erythrocyte sedimentation rate (ESR) of 57 mm/hour and a normal full blood count. An urgent MRI scan of the left foot revealed a large effusion of the talonavicular joint, with pockets of fluid medially, laterally and tracking dorsally (figures 1 and 2). USS-guided aspiration yielded frank pus, with a positive gram stain.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis included an acute exacerbation of her chronic conditions such as acute

Figure 1 Sagittal Short T1 Inversion Recovery (STIR) image demonstrating hyperintense fluid signal dorsal and plantar Talo-Navicular Joint (TNJ) effusions (arrows) and hyperintense oedema-like marrow signal either side of the TNJ.

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Figure 2 Axial STIR image at the level of the talar neck demonstrating proximal medial extension of the hyperintense fluid TNJ effusion.

neuropathic pain or complex regional pain syndrome. New pathological processes in the form of acute gout, stress fracture or septic arthritis were other less likely differential diagnoses.

TREATMENT

She underwent prompt open surgical drainage of the talonavicular joint later the same day. Medical treatment was provided with a multidisciplinary team approach from microbiology and rheumatology colleagues. Her joint fluid cultures grew methicillin-sensitive *Staphylococcus aureus* (MSSA). MSSA-targeted adjuvant antibiotic therapy was started to include 6 weeks of intravenous ceftriaxone and oral rifampicin, followed by 6 weeks of oral clindamycin.

OUTCOME AND FOLLOW-UP

Serial blood tests showed a peak CRP of 56 mg/L and ESR of 90 mm/hour, falling to normal levels within 4 weeks of washout. These normal parameters have been maintained. Serial MRI scan

Figure 3 Preoperative lateral radiograph demonstrating normal talonavicular joint.

Figure 4 Six-month follow-up postoperative lateral radiograph demonstrating abnormal talonavicular joint with joint space narrowing, cortical destruction, subchondral sclerosis and collapse.

and plain radiographs have demonstrated no recurrence of effusion within the talonavicular joint, but progressive evidence of joint surface destruction, severe arthropathy and deformity. The foot has become stiff and painful, with flattening of the longitudinal arch and talonavicular displacement (figures 3 and 4). At present, the foot shape has stabilised, and her joint pain is manageable. If the pain or deformity worsens, a talonavicular joint arthrodesis would be the surgical treatment of choice. This would need to be carefully planned to ensure there was no residual infection. Follow-up at the time of writing is 12 months.

DISCUSSION

This case demonstrates that although septic arthritis is a well-known and important differential diagnosis of an acute monoarthritis, the diagnosis can be delayed and it is still easily missed. It can occur in small joints. Other medical and psychological comorbidities can complicate the presentation. It becomes even more complex when a patient with a background of chronic pain presents with an acute exacerbation and joint swelling in the affected limb.

In the only other adult case report of talonavicular septic arthritis, the patient was a fit and well male engineer in his 40s. There were no comorbidities to cloud diagnosis, and surgical drainage was undertaken without arthrocentesis of the suspected joint.¹

The principles of treatment of talonavicular joint septic arthritis are no different than for any other joint.

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Patient's perspective

Initial symptoms

- Initially I had swelling and moderate pain. This progressed to severe, unbearable pain. I was unable to bear weight on my foot. The pain wouldn't ease whatever I did. I was taking very strong pain killers which barely touched the pain.

Current symptoms

- Pain in my foot in the morning and after sitting for any periods. After walking for a short period my pain lessens. My foot is still swollen and I cannot wear certain shoes. I can now walk unaided but only with insoles.

Learning points

- ▶ Primary septic arthritis of the talonavicular joint remains very rare with only two documented cases.
- ▶ Patients with other pain generators must still be fully investigated if not clinically improving.
- ▶ Ultrasound scan is readily available and should be used for diagnosis and image-guided aspiration. MRI is of great benefit to track effusions and monitor joint condition as treatment is undertaken.
- ▶ Avoid the use of steroids if septic arthritis has not yet been ruled out by joint aspiration.
- ▶ A multidisciplinary team approach is required to manage cases such as this.
- ▶ Without prompt surgical drainage, chondrolysis may cause joint degeneration and deformity.

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