

Competing interests

None declared.

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Beware the penetrating knee injury

Dear Editor,

We report a case of delayed septic arthritis of the knee in a 12-year-old boy following a penetrating injury.

The patient presented to the ED with a 24 h history of fever, right knee swelling, pain, exacerbated by weight bearing and movement.

History revealed that 17 days earlier, the patient had sustained a penetrating injury to the anterior aspect of his right knee just lateral to the patella tendon following a fall onto a wooden toothpick. The toothpick was stated to have snapped off on impact.

An ultrasound was arranged by his attending general practitioner showing retained foreign body superior to the puncture wound. The patient was referred to an ED, and this fragment was extracted in the ED under local anaesthetic.

The patient was asymptomatic until the day of the second presentation.

On presentation, the patient was febrile (39°C), with a large knee effusion and the joint painfully held in 30 degrees of flexion.

Investigations showed a CRP of 61 mg/L, ESR of 68 mm/h and white cell count of $9.7 \times 10^9/L$. Plain radiographs of the knee were unremarkable, with no intra-articular gas or foreign body identified.

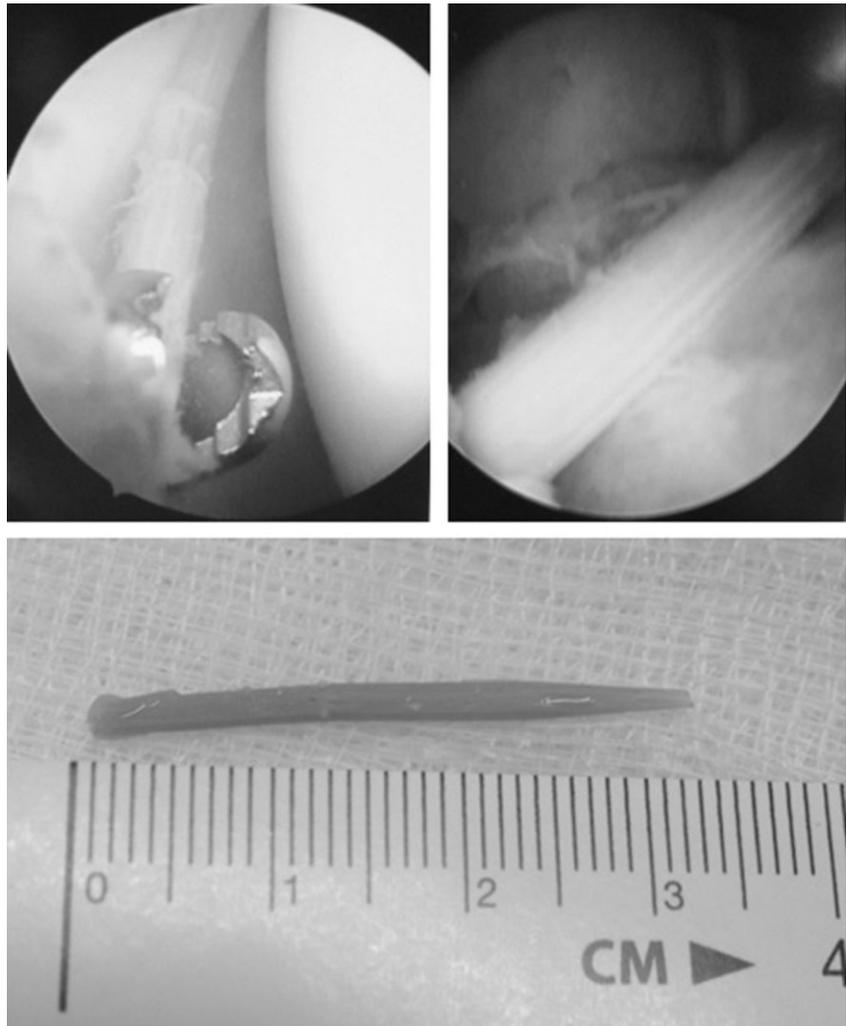


Figure 1. The upper photos are taken at time of arthroscopy, demonstrating the toothpick within the femoral notch. The lower photo is the offending toothpick.

There was 85 mL of turbid fluid aspirated from the knee and sent for microscopy, gram stain and culture. No organism or crystals were identified. The cell count contained 51 250 polymorphs per mL, 310 lymphocytes per mL and 2250 red blood cells per mL.

Empiric treatment with i.v. flucloxacillin (1 g, 6 hourly) was commenced.

The patient proceeded to an arthroscopic washout of the knee where a 32 mm fragment of toothpick was identified within the intercondylar femoral notch (Fig. 1). This was removed, the entry wound from the toothpick was excised and thorough lavage of the joint was performed.

The initial arthrocentesis demonstrated no bacterial growth on culture media after 5 days. *Staphylococcus epidermidis* was grown from a blood

culture sample taken before the operation. Intraoperative synovial fluid grew a bacillus species after 2 days of culture. Both bacterial isolates were thought to be contaminants.

The patient received 2 weeks of intravenous flucloxacillin, followed by 4 weeks of oral cephazolin, despite the equivocal culture results.

On last review at 6 weeks after surgery, the patient has a normal range of movement, minimal pain and normal biochemical markers.

This case highlights the importance of maintaining a high index of suspicion for intra-articular extension with any peri-articular penetrating injury, especially around the knee joint. Retained foreign material should be considered if the extracted segment is broken at the penetrating end.

Typically, intra-articular foreign bodies cause mechanical symptoms (e.g. painful locking and clicking).

However, in this case, the fragment of toothpick lodged in a non-weight-bearing portion of the knee, leading to the delayed presentation.

Furthermore, penetrating objects of a wooden nature (toothpicks or thorns) can cause diagnostic challenges with an initial indolent synovitis, late joint sepsis and difficult bacterial isolation.

Competing interests

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Pulmonary haemorrhage from therapeutic rivaroxaban use: Chest radiograph consolidation is not always infection!

Dear Editor,

A 71-year-old man presented to our ED complaining of dyspnoea and haemoptysis (multiple clots, five episodes) during the previous 3 days. Past medical history included atrial fibrillation, previous stroke, and he was a previous smoker. Regular medications included amiodarone started 2 weeks prior, rivaroxaban and telmisartan. He was referred from his general practitioner with a provisional diagnosis of pneumonia based partly on a chest radiograph demonstrating right lower lobe consolidation (Fig. 1). He denied any history of fever, purulent sputum or chest pain. Initial observations were: temperature 36.8°C, heart rate 80/min, blood pressure 150/

60 mmHg, respiratory rate 18/min and pulse oximetry 88% on 21% inspired oxygen. Examination revealed decreased air entry and crepitations on auscultation of the right lung field. He complained of right calf pain, but there were no features of a deep vein thrombosis using Well's criteria.

Initial investigations: haemoglobin 146 g/L (130–180), white cell count $8.7 \times 10^9/L$ (4–11), platelets $220 \times 10^9/L$ (150–400). Electrolytes, renal and liver function tests were normal but he had an abnormal coagulation profile: international normalised ratio (INR) 3.1 (1.0–1.1) and activated partial thromboplastin time 54 s (22–38). Initial arterial blood gas on 21% inspired O₂ showed a pH 7.44 (7.35–



Figure 1. Chest X-ray of right lower lobe consolidation.

7.45) pCO₂ 34 mmHg (35–45) and pO₂ 56 mmHg (80–100). Differential diagnosis included infection, pulmonary haemorrhage and lung neo-