

Case Report

A RARE CASE OF KIRSHNER'S NEEDLE IN THE LIVER AFTER OSTEOSYNTHESIS OF RIGHT HUMERUS

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Summary

Indirect entry of foreign body in the liver is very rare, with only about 20 cases reported. Most of them result from swallowed sewing needles by elderly women inadvertently with a subsequent migration from the gastrointestinal tract to the liver. We present a rare clinical case of 83- year-old woman with mild abdominal pain in the right subcostal region due to indirect entry into the liver of one of the three Kirshner's needles used for osteosynthesis in the proximal right humerus, which was not found when they were removed one month after placement. The needle was found in the liver by an overview, target radiography and CT-scan of the abdomen. Minilaparotomy was performed and the foreign body was removed without complications.

Keywords: foreign body, liver, Kirshner's needle

Introduction

Indirect migration of a foreign body to the liver is very rare. The majority are due to ingested, inadvertently or deliberately, sewing needles, followed by migration from the gastrointestinal tract to the liver over long periods of time. The patients are most often mentally ill, young children or mostly elderly [1-11]. In most cases, the presence of a foreign body is discovered accidentally, due to the absence of clinical symptoms or on account of very mild abdominal pain, which patients do not pay attention to. A variety of surgical techniques are used: open surgery, laparoscopy. In some cases treatment is not undertaken because of the risk of complications.

Here we present a very rare clinical case treated at the clinic. The patient was 83 years old women, with a Kirshner's needle in the liver after osteosynthesis in the proximal part of the right humerus. The needle was successfully extirpated by minilaparotomy.

Clinical case

An 83 year old woman was admitted to the clinic of surgery of the University Hospital – Pleven,

presenting with spontaneous and palpable pain in the right subcostal region. The pain was reported to occur one month after osteosynthesis for the right shoulder joint fracture with three Kirshner's needles, each 12 cm long (Figure 1). During removal of needles about four weeks later, one was not found (Figure 2). The patient was admitted for further assessment. Target radiographies of the abdomen were administered, and a foreign body with a metal density in the upper right quadrant, probably located in the liver was detected (Figure 3a, 3b). A CT scan of the abdomen (Figure 4) visualized a metal needle located in the right lobe of the liver. The location was almost subcapsular of 7-th segment, directed cranio-caudally and slightly obliquely, with the proximal part slightly sticking in the neighboring parietal peritoneum. In the distal part, the tip of the needle projected on the visceral surface of the 5-th segment. Laboratory tests proved a mild anemia (Hb 108 g/l) and leukocytosis (Leu 10.7 cells/mm³). Results from other paraclinical examinations were normal. Minilaparotomy was performed during which a 12-cm Kirshner's needle (Figure 5) was extirpated. The needle was situated in the right lobe of the liver, with a small projecting tip of the visceral surface. No other pathological alterations in the abdominal cavity were found. On a control intraoperative radiography there were no signs of a residual foreign body in the liver. The patient was discharged in good health on the 10th day after hospitalization.

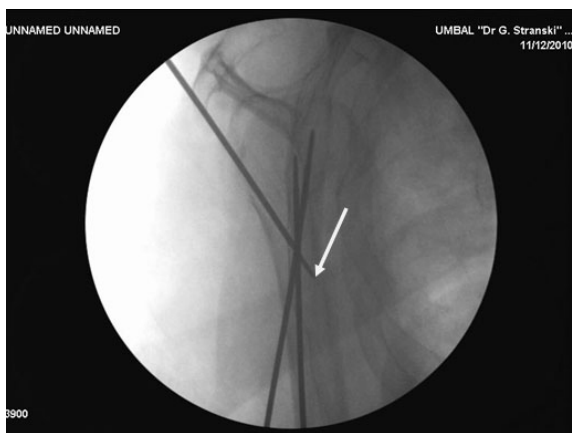


Figure 1. Radiography of osteosynthesis of the right shoulder joint fracture with three Kirshners' needles. Arrow shows the tip of one of them who entered the neighboring intercostal area.

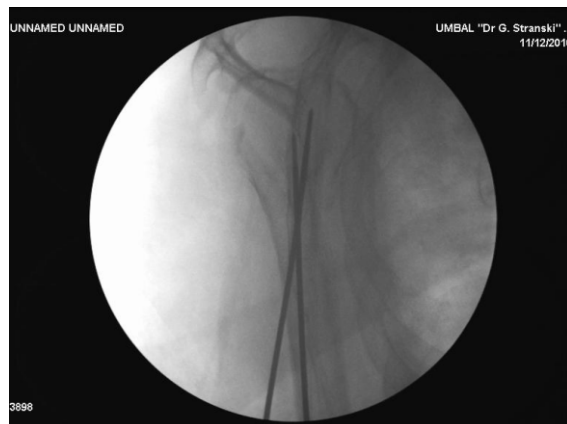


Figure 2. Radiography of osteosynthesis of the right shoulder joint fracture which shows the presence of two out of the three Kirshners' needles after 1 month. The third needle is missing.

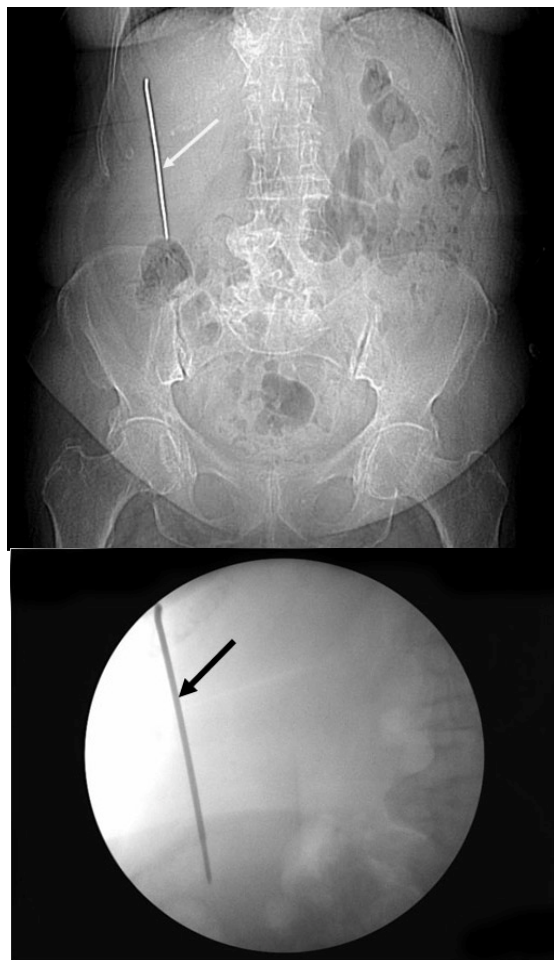


Figure 3a,b Overview and target radiographies of the abdomen. Arrows show Kirshners' needle in right hypochondrium.

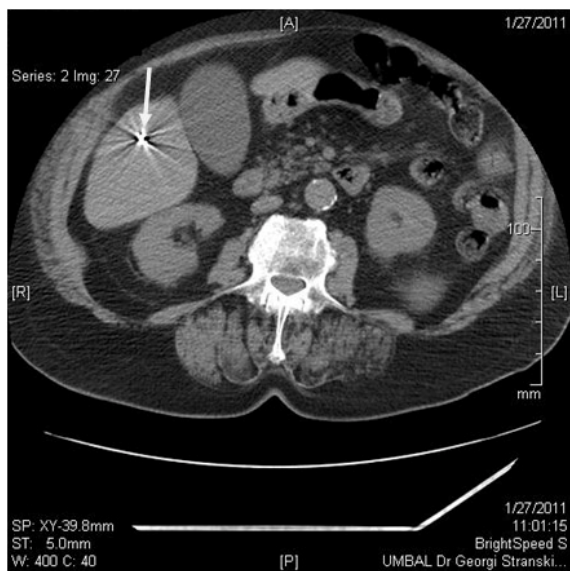


Figure 4. CT of the abdomen. Arrow shows Kirshner's needle in the right lobe of the liver.



Figure 5. Kirshner's needle after extraction from the liver. The size matches the original – 12sm.

Discussion

Indirect entry of a foreign body in the liver is very rare. The literature describes only about twenty similar cases [1-11]. Patients reported are usually children [1, 2, 4, 5, 8], mentally ill [6, 9] or elderly people [7, 10, 11]. Detection of foreign bodies is achieved accidentally by imaging studies [1-11] because of the absence of any symptoms, or on account of the presence of very mild abdominal pain. The treatment in cases with expected complications includes various surgical techniques – open operations [1, 5, 7, 8, 11], laparoscopic surgery [3, 4, 9] and, in some cases, withholding from treatment because of absence of imperative evidence.

In our case the 83 year old woman had mild abdominal pain in the right subcostal region caused by the presence of a Kirshner's needle in

the liver which could be probably referred to an indirect entry in the organ. This probably happened for a period of several weeks after osteosynthesis with three similar needles placed in the proximal part of right humerus. Probably, one of the needles was more loosely attached or it loosened afterwards. We suppose that its tip entered the loose space of the neighboring right axilla (Fig.1) where as a result of the movements of *m. teres major* et *m. latissimus dorsi* passed beneath them, and later distally lumbar where it was captured by the lower insertion of *m. latissimus dorsi* over the last rib. We made this assumption after careful analysis of the CT scan of the abdominal organs, which clearly showed communication of the proximal end of the needle with the subperitoneal space around the right lobe of the liver (Figure 6). Our assumption was confirmed by the intraoperative findings.

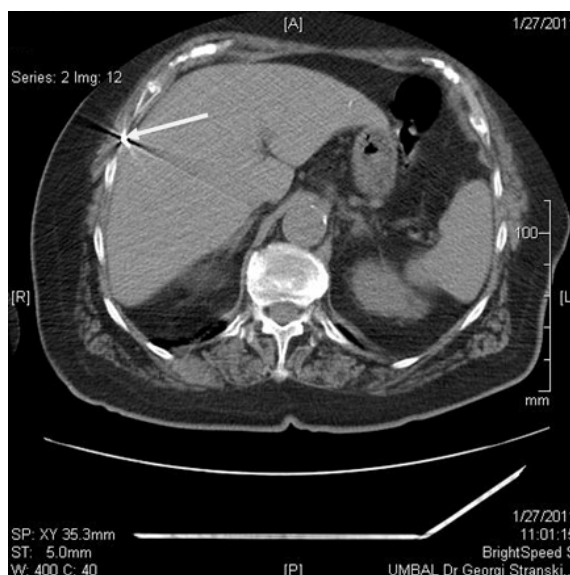


Figure 6. CT of the abdomen. The arrow shows communication of the proximal end of the needle with subperitoneal space around the right lobe of the liver

Conclusion

Indirect entry of foreign body into the liver is very rarely seen, and can occur through a variety of mechanisms. Most often it has no typical clinical presentation, and is accidentally detected after imaging examination of the abdomen [1-11].

Healing tactic often requires surgery, especially in cases with risk of complications [1-5, 7-9, 11].

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