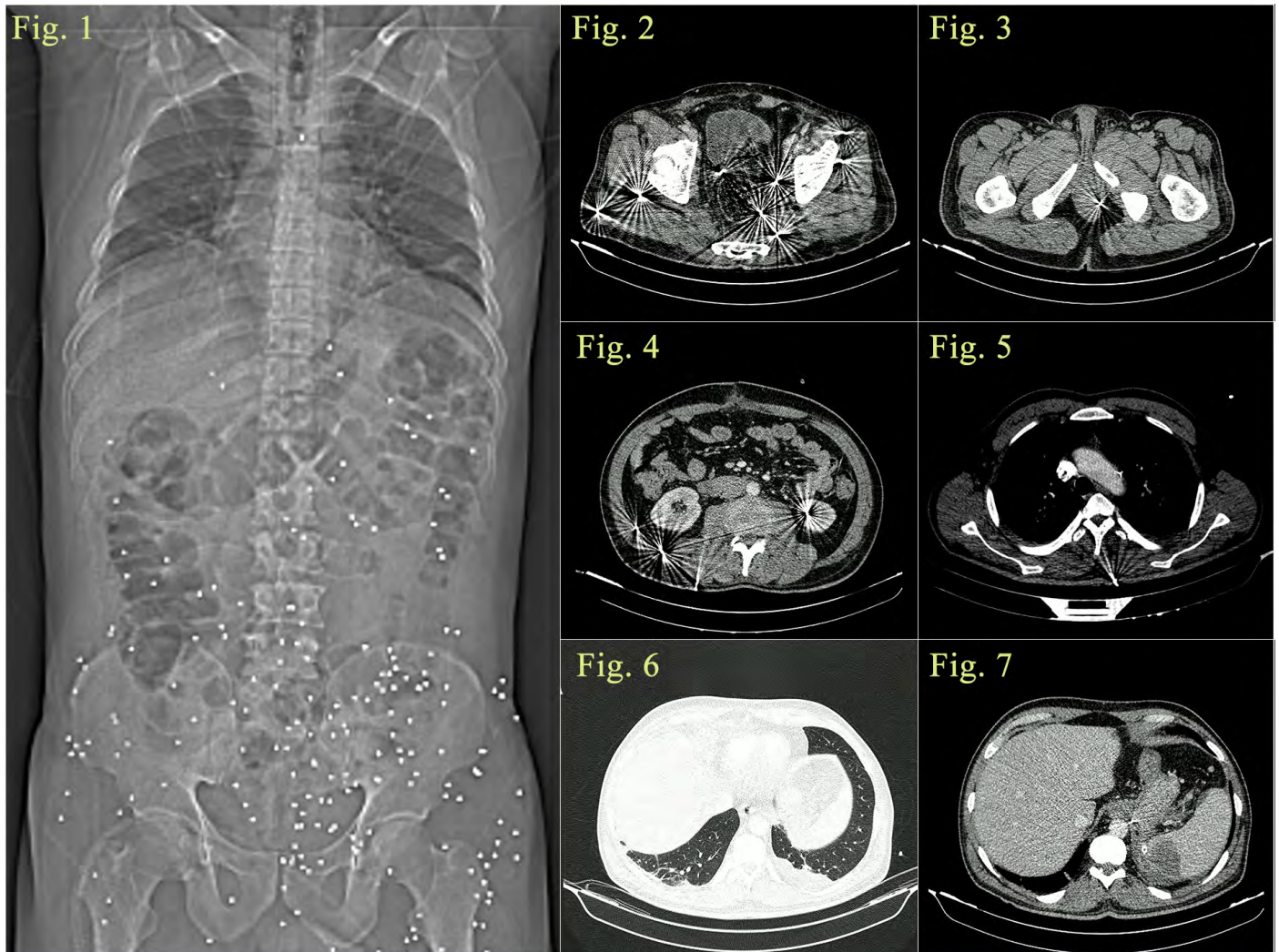


Several foreign bodies throughout the torso following a shotgun injury

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A 50 year old man with a history of posterior bullet shot with a shotgun was presented to the hospital 18 hours after the accident complaining of abdominal and gluteal pain. He had stable vital signs, no respiratory distress, and no active bleeding. Physical examination revealed abdominal tenderness and generalized abdominal guarding. After a primary survey, a complete abdominopelvic ultrasonography and whole body computed tomography (CT) scan were performed (Figure 1) and revealing several bullet fragments (confirmed with Hounsfield scale) in paraspinal and

abdominal wall, mesenteric fossa, perirectal and pre-nephric area, intestinal surroundings and iliac fossa (Figure 2 and 3).

KEYWORDS

Shotgun, Lead Poisoning, Firearms, Magnetic Resonance Imaging, Computed, Computed tomography, Pancreatic Pseudocyst, Multiple Retain fragments, Ballistic Debris, Gunshot wounds

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CITE THIS PAPER AS

Nahavandi Z, Aghdaee AH and Nekooghadam SM. Several foreign bodies throughout the torso following a shotgun injury. *Sch Med Stud J.*2021;3(2):1: Visual Practice

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One of the bullet fragments was observed in left inferior renal calyx (Figure 4). Moreover another fragment was touching aortic arch (Figure 5).

Afterwards, the patient underwent explorative laparotomy. About two liters of blood clot was observed in pelvic fossa. Also evidences of spleen injury and pancreas tail and rectum hematoma with no active bleeding was observed. The patient was evaluated for damage to the mucosal layer and the ischemia of rectum due to the rectal injury; that, fortunately, was normal. All four quadrants were packed and drainage was applied for pancreas. Since there was no fragment in aortic intima, no intervention was needed. After post-operative antibiotic therapy and other follow-ups such as urologic assessments, the patient was discharged.

After two weeks, the patient was again referred to the hospital with pain in the site of drainage tubes. In laboratory tests amylase levels was 162 (U/L) and lipase levels was 83 (U/L). Plural effusion and atelectasis were observed in left lung CT scan (Figure 6) which did not need invasive intervention. Accumulation of spleen subcapsular fluid was observed in abdominopelvic CT scan. Loculated fluid collection was observed in pancreaticosplenic and paracolic areas (Figure 7) which led to diagnosis of pancreas drainage infection. The patient was treated with wide spectrum antibiotics and the symptoms were resolved. Also, there was the possibility for lead poisoning with lead bullet fragments, therefore serum levels of lead were examined after two months. The results showed a high level of lead concentration in serum (29 µg/dL). The patient was treated with antioxidant and vitamin C and asked to refer to the hospital every 2 months to check the lead level and have it under control [1, 2]. Administering chelating agents such as dimercaptosuccinic acid and calcium disodium EDTA should be considered if the serum lead level is increased in the follow-up. Moreover, with the possibility for secondary adverse effects due to retained fragments, such as fistula formation, visceral adhesion, recurrent infection, etc., the patient was advised to do frequent imaging checkups.

According to similar cases and new studies, the presence of the lead in the bullet fragments won't be causing any contraindications for magnetic resonance imaging but may cause some artifacts thus the alternative imaging tests such as CT or X-ray graphy are suggested. There's also no evidence for the pellets movements and visceral organs injury after MRI in shotgun injury cases [3, 4].

ACKNOWLEDGEMENT

Special thanks and our very great appreciation to Doctor Niki Tadayyon and her expert team for their valuable efforts to manage the patient during the admission time and also the surgery and post-surgical cares given to the patient, and their marvelous responsibility due to students' practise, and enabling us to have an access to the patients treatment information for our Visual Practice.

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