The Significance of Routine Computer Tomography in Evaluation of Asymptomatic Postoperative War Trauma Patients Transferred from Syria for Further Treatment

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During the past 3.5 years our medical center has admitted more than 1500 wounded Syrian patients, brought to Israel from across the border. Caring for wounded victims from a neighboring country presents an unusual challenge due to a most unconventional situation. Most wounded patients arrive at our hospital many hours, and sometimes even days, after their injury. The patients are left at the Israeli field hospital on the Israel–Syria border. There is no communication whatsoever between the medical teams in Syria that initially treated the patient either on the battlefield or in a Syrian hospital and the Israeli medical team. The patients come to us with no documentation, even following surgery (most often lifesaving) in a Syrian hospital or field hospital. When asymptomatic and hemodynamically stable patients arrive at our medical center for further treatment following emergency surgery (even several days after surgery), a clinical – surgical dilemma arises regarding the proper medical approach for such patients. Currently, it is our policy to use routine computed tomography (CT) in such cases to enable us to rule out unexpected findings that might lead to significant early and late surgical consequences.

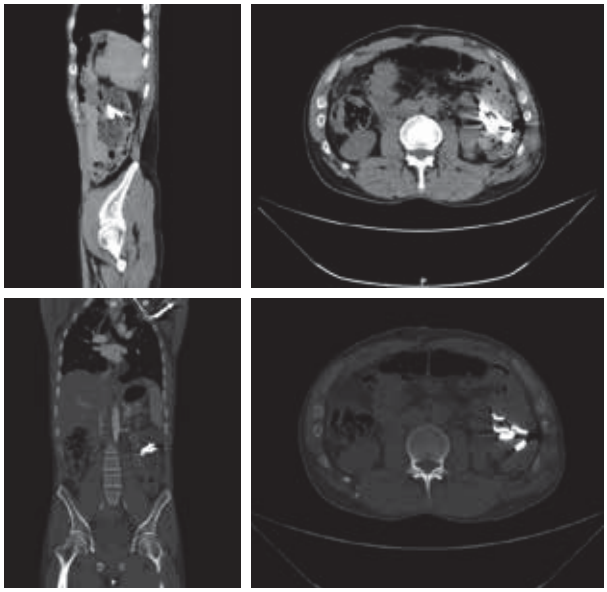
CASE SERIES

We describe the cases of three asymptomatic wounded Syrian patients who recently were treated in our surgery department following emergency abdominal surgery in Syria, which was performed 2–5 days before admission to our medical center. All were hemodynamically stable and their blood count was within normal limits. They were asymptomatic, conscious, without neurological deficit, and communicative. Chest examination was normal and neither abdominal sensitivity nor peritoneal irritation was elicited. Two patients (A and B, 35 and 27 years old, respectively) were injured by high-velocity gunshot wounds directed from the lower chest toward the abdomen. They presented with a mid-abdominal vertical scar without evidence of wound infection or secretions. The third patient (C, 20 years of age), was injured by multiple mortar shrapnel both in his abdomen and legs. Loop ileostomy was seen in the left lower quadrant, together with two drains on each side of the abdomen, draining serous bloody secretions. A Foley catheter also was draining the pelvis through a wound in the right gluteal area. An open fracture of the right tibia bone was also noted. On admission, each patient was fully monitored and treated with intravenous crystalloid solutions, broad spectrum antibiotics, and toxoid. Complete blood count as well as liver and renal function tests and blood typing were taken from each patient, and a total body CT scan was performed on each individual.

CT scans of the abdomen taken for patients A and B revealed a small amount of free abdominal air and fluid (normal for several days post-laparotomy). In addition, patient A's CT revealed superficial splenic laceration together with capsular tear of the left kidney without evidence of a urinary leak, fracture of the first lumbar vertebra without cord compression, and high density suspected foreign body materials (similar to medical pads) in the peritoneal cavity [Figure 1]. In patient B, metal abdominal shrapnel was noted together with foreign body material suggestive of medical pads. The CT scan taken for patient C, in addition to a small amount of free air and abdominal fluid, a second degree laceration of the left hepatic lobe, comminuted pelvic fractures with muscle hematoma, diffused shrapnel, and high density foreign bodies, suggestive of three medical pads were found. Consequently, each patient then underwent exploratory re-laparotomy. Intra-operative findings for patients A and B revealed serous fluid without damage of parenchymal organs or any vascular or intestinal injury. Three medical pads were located in the left upper quadrant in patient A and one in patient B. All were removed from the peritoneal cavity, and the abdominal wall was primarily closed. Postoperative convalescence of patients A and B was uneventful.

Intra-operative findings in patient C revealed loop ileostomy located in the distal ileum, without evidence of intestinal isch-

Figure 1. Computed tomography scan of patient A, indicating suspected medical pads in the left upper quadrant of the abdomen



emia, active bleeding, or intra-peritoneal sepsis. One drain was located in the sub-hepatic space and the second in the left lower abdominal quadrant. The Foley catheter was located adjacent to pelvic floor muscle tears, without evidence of hematoma. Three medical pads were found and removed from the right lower quadrant and pelvis. Post-operative convalescence was prolonged due to paralytic ileus and renal failure that gradually resolved under conservative treatment that included total parenteral nutrition together with close monitoring until the patient resumed normal oral feeding and his condition improved.

COMMENT

A retained foreign body in the abdominal or chest cavity following surgical intervention can increase patient morbidity and mortality [1,2]. Despite precautionary measures, this situation can still happen in daily practice, especially in emergency surgery carried out in war-torn regions where doctors and nurses are working under extreme conditions. In these situations the standard working rules in the operating room, including the counting of surgical instruments and pads before definitive closure of abdomen, are difficult to uphold.

In general, the incidence of post-surgery retained foreign bodies in the abdominal cavity is 1:5500 [3]. Risk factors that increase the chance of retained foreign bodies are emergency surgery, particularly after severe intra-abdominal injuries that require the use of a large number of surgical pads during the operation, high body mass index (BMI) of patients, prolonged surgical procedures, and involvement of different surgical teams during the same surgery [4,5].

Lack of communication between medical teams from different institutions and lack of documentation during the transfer of injured patients from place to place can increase the risk of overlooking such medical errors.

In the three cases described here, the patients had already undergone surgery and were asymptomatic. The concerns we had were whether we should proceed with conservative treatment or continue a medical investigation before continuing. The lack of any medical documentation and the assumption that the surgeries had been done under extreme conditions, perhaps in a field hospital, prompted our decision to perform the total body CT that eventually led to the removal of abdominal medical pads in all three subjects.

Based on our experience, we believe that patient surgical treatment in a war situation and other extreme conditions can be risk factors for intra-abdominal retained foreign bodies. We strongly recommend performing routine CT examinations for all patients (symptomatic and asymptomatic) who have undergone previous emergency laparotomy before being transferred to other institutions, especially across borders to another country, without any information or documentation.

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"It's not enough to be busy... the question is: what are we busy about?"

Henry David Thoreau, (1817–1862), American essayist, poet, philosopher, abolitionist, naturalist, tax resister, development critic, surveyor, and historian