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Original Research Paper

Surgery

INFRARENAL PREAORTIC FOREIGN BODY - AN UNFORESEEN CASE OF MYSTERIOUS ORIGIN

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ABSTRACT Time and again in medical literature, extra-luminal foreign bodies have been documented in different parts of the body. However, the occurrence of non-firearm, non-explosive, non-iatrogenic foreign bodies are rare. Most foreign bodies are seen in high-risk populations such as paediatric age groups, psychiatric patients, alcoholics and are usually found incidentally while screening for some other medical condition. Most swallowed foreign bodies; depending on their shape and size are generally passed out naturally, a few tend to get lodged along the tract, causing perforations and rarely may migrate to nearby organs or viscera. While symptoms may vary, a large number of these foreign bodies may go unnoticed for years, making it a challenge to accurately trace their incidence or the source of occurrence. Here, we present a case of a 58 year old man with a linear thin metallic wire in the infra-renal, pre-aortic region with no possible clue for origin or migration making its whole presence a mystery!

KEYWORDS : Foreign body, Abdomen, Retroperitoneum, Foreign body migration, Non-ballistic

Case Report:

A 58 year old, man presented to our tertiary care hospital with a two week history of abdominal pain and burning micturition. The pain was primarily in the right flank and iliac fossa, aggravated on sudden change in posture. He neither had vomiting, diarrhoea nor past history of abdominal trauma or surgery. He was known to have Diabetes Mellitus and Hypertension.

On abdominal examination, there was tenderness in the right iliac fossa.

WBC count was elevated at 12400/c.mm and urine showed plenty of pus cells. Abdominal USG was unremarkable. The patient was given a week's course of Norfloxacin for a suspected UTI. As there was no relief of his symptoms, an abdominal CT scan was performed. It showed a heterogeneous retroperitoneal soft tissue fibro-inflammatory pseudo-mass surrounding a linear 4.5 cm hyper-attenuating metallic foreign body. The lesion was reported to be an abscess in front of the infra-renal aorta-IVC vascular compartment. There was suspicion of erosion into the wall of the IVC/Aorta and hence, a CT angiogram was performed. It confirmed the above findings of a fibro-inflammatory pseudo-mass containing a foreign body, touching the anterior wall of the main vessels. There were no clues as regards to the possible path of entry, whether from the bowel or via per-cutaneous route.



Fig 1 Abdominal CT films in Axial (a) and Coronal (b) plane showing foreign body with surrounding abscess



Fig 2 CT Angiogram films in Sagittal (a) and Coronal (b) plane showing foreign body in close proximity to main blood vessels

Exploration of the retroperitoneum with removal of the foreign body was planned. The right colon and C-segment of the duodenum were mobilized to expose the retroperitoneum. Proximal and distal control of the aorta was achieved before entering the abscess cavity. After draining the pus, a **6 cm long piece of wire** was removed from a densely fibrosed cavity.



Fig 3 Foreign body seen Intra-operatively

Fig 4 Foreign body removed

His post-operative recovery was uneventful and he was discharged on the 3^{rd} postoperative day. A year after his surgery, he remains symptom free.

DISCUSSION:

Foreign bodies found in the human body are broadly

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classified as Ballistic and Non-Ballistic foreign bodies, the former includes injuries sustained by Firearms/Air guns or due to improvised explosive devices (IED) such as those found in the combat scenario or Industrial/Household explosions and may consist of materials such as metal, stone, plastic, ceramic, wood, clothing, flesh, bone, or vegetable matter [1].

Non-Ballistic foreign bodies on the other hand are primarily found due to Ingestion/Insertion in bodily orifices [2] or consist of surgical instruments or sponges left behind during surgeries, with multiple such reports existing in medical literature such as needles, coins and even cases of gossipiboma [3] having made their way into the abdominal cavity. Non-Ballistic foreign bodies are commonly seen in the paediatric age group followed by other high-risk populations such as psychiatric patients, alcoholics and are usually found incidentally while screening for some other medical condition, with most cases being managed in the OPD or on a Day Care basis.

Hospitalization is needed when foreign bodies are deep seated or have caused any complication. Acute presentation of foreign bodies is uncommon and most are known to remain subclinical [4] . Late presentation can be due to development of secondary issues like chronic pain, abscess formation, haematoma formation or due to its slow migration [5] in body tissues leading to perforation [6] of a hollow viscus or fistula formation. Foreign bodies can travel long distances from its primary site of entry due to bodily movements. Other rare occurrence can happen via trans-vascular embolization [7] i.e if the foreign body slowly erodes into a major blood vessel. In such a case, the foreign body gets lodged far from its entry point which may never be identified. Rarely malignancy has been reported in close proximity to the foreign body but the cause-effect of such a situation is unclear. Presentation may vary from completely asymptomatic to severe symptoms caused directly through underlying sinister complications or indirectly by invasion/compression of surrounding organs or structures post migration.

Choosing a correct diagnostic modality is very important and is dependent on the nature of the suspected foreign body. While MRI is helpful in evaluating soft tissues, it may be dangerous and contraindicated when metallic foreign bodies are suspected. Ultrasonography is a quick and good tool to diagnose various pathologies especially an abscess or haematoma associated with the Foreign Body. However, a deep seated problem in the retroperitoneum can be easily missed such as in our case. Again, severe fibrosis around the foreign body or its concealment behind the intestine may make its radiological visualization very difficult. CT scan probably remains the investigation of choice to detect foreign bodies in the retroperitoneum due to its superiority in visualization of highly radiopaque [8] materials and may also give clue to their trajectory pathway of migration if any as well as its relationship to the important structures surrounding it. In our case, path of entry or migration was not established either on CT scan or through direct visualization intra-operatively of surrounding viscera and running through bowel to seek any signs of perforation. However, as per reported medical literature, the source of origin could have either been luminal, transluminal, percutaneous [9] or transvascular, with migration into retroperitoneal space in our case probably being through a now sealed off gastro-intestinal perforation.

The need for an active surgical intervention especially when a foreign body is found incidentally depends on the risk-benefit calculation involved in removal of the foreign body. Intraabdominal foreign bodies should be removed as soon as possible or may eventually cause complications in the future.

Extraction of an intra-abdominal or retro-peritoneal foreign body, may be done laparoscopically or by laparotomy. In the present case, an explorative laparotomy was chosen as there was a faint suspicion of the sharp foreign body having pierced the adventitia of the aorta; where room for error was slim. Along with the foreign body being symptomatic, its proximity to aorta was also the deciding factor for removal of the foreign body as it carried a major future risk [10]. Post removal, the patient had an uneventful recovery and stayed symptom free till date.

CONCLUSION:

Non-ballistic foreign bodies getting lodged deep inside the body are uncommon. Many a times, its source remains shrouded in mystery and one may never know how the Foreign Body reached its final destination. Migration to distant organs due to bodily movements, perforation or transvascular embolization to distant sites have been reported. Such migration can cause serious complications and hence Foreign Bodies should be removed unless they are at such sites that removal itself carries a high risk.

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