A Fish Bone Eliminated Insidiously from an Intestinal Loop, as a Cause of Ureteral Obstruction, Urinoma and Urosepsis.

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Abstract: We presently report the case of hydronephrosis, urinoma formation and urosepsis resulting from ureter obstruction caused by an ingested fishbone that has passed spontaneously without any symptom through intestinal loop to the right ureter. Computed tomography indicated a high-attenuation sharp elongated object located transversally to the right ureter that we thought it was a fish bone. The foreign body was removed surgically and was proven a fishbone. To our knowledge, there has been no previous report of such ureteral obstruction published in the English literature.

Key words: fishbone, computed tomography, ureteral obstruction, urinoma, urosepsis

1. Introduction

Reports on foreign bodies within the ureter are extremely rare in the literature. Herein, we present a case of a fish bone that has passed insidiously from an intestinal loop penetrating and obstructing the right ureter and causing urinoma formation and urosepsis. The majority of swallowed objects pass through the gastrointestinal tract without any complication (1). About 20% of ingested foreign bodies fail to pass through the entire gastrointestinal tract (2). Dietary foreign body is the most commonly ingested object giving rise to gastrointestinal perforation (3). The most common sites of perforation are the ileocecal junction and sigmoid colon (4). Elongated objects such as fish bones, chicken bones, and toothpicks are the foreign bodies most frequently reported to have caused a perforation (5). They may cause severe, sometimes fatal, internal injuries due to gastrointestinal perforation and migration to adjacent structures (6,7). In many cases, these types of perforations do not occur acutely or cause acute symptoms. The object may partially perforate the bowel wall and produce a chronic inflammatory process that has few symptoms, being discovered months or years later (8). It often causes confusion at presentation and can masquerade as many differential diagnoses. We present a case of fishbone perforation of the right ureter in which the diagnosis firstly was not clear. CT with intravenous contrast administration is the imaging modality of choice, as it can detect very small and even radiolucent fish bones. The multiplanar capability of CT further improves the diagnostic accuracy and may help in management.

2. Case report

Our case is of a 50 years old white male who was hospitalized to the Urology Department in October 2015, with right flank pain, fever, fatigue for over three months with no symptoms of gastrointestinal disturbance and no abnormality upon examination of the abdomen. Vital signs were as follows: blood pressure 120/80 mm Hg, pulse rate 100 bpm and core body temperature 38.5°C. Chest and heart examinations were normal. The abdomen was soft and without tenderness. The liver and spleen were not palpable. Laboratory evaluation revealed a WBC count of 14.5 × 10⁹/l with a left shift and urinalysis with pyuria and microscopic hematuria. Abdominal ultrasound revealed right pyelo-ureteral dilatation without evidence of renal calculus. A contrast abdomen CT scan with multiplanar reconstruction was performed (Fig.1,2,3,4). It showed a sharp-pointed elongated object approximately 3 cm long with osseous attenuation, located transversally in the middle 1/3 right ureter (pelvic ureter) associated with proximal ureter ectasis (2 cm) with ureteral microcalculi proximal to the obstruction, hydronephrosis, perinephric urinoma, pyelo-ureteral wall thickening, perinephric and periureteral stranding.
and minimal right pleural effusion. Object characteristics on CT scan in addition to the fact that our patient was a lake city citizen thus part of a population with a high consumption of seafood, were indicators that the object was a fishbone. The patient was admitted for surgical intervention. During intervention the surgeons found a fishbone penetrating to the right ureter (Fig. 5). Fish bone retrieval, segmental ureteral resection with termino-terminal anastomosis and ureteral stenting were performed. Additional treatment consisted of antibiotic use (levoflaxacin 750 mg i.v./day/once a day and metronidazol 750 mg i.v. x 3/day for 15 days), NSAID (indomethacin suppositories 100 mg x 2/day), antacids (ranitidine 100 mg i.v. x 4/day), saline infusions, electrolytes. The patient did well and was discharged on post-operative day 12. He did not recall fish bone ingestion but he affirmed he was a fish consumer. Meanwhile, an intravenous pyelogram was performed, which revealed normal right renal function without dilatation of collecting system.

![Fig. 1. Fish bone with multiplanar reconstruction.](image)

![Fig. 2. Fish bone penetrating the right ureter.](image)

![Fig. 3. Fish bone and right ureter dilatation with microcalculi proximal to the obstruction.](image)

![Fig. 4. Urinoma and hydronephrosis of the right kidney.](image)
3. Discussion

3.1. Foreign bodies in ureter

Foreign bodies in the urinary tract are very rare and mostly follow iatrogenic manipulation (9). We reviewed the literature and could find cases with ureteral obstruction caused by foreign bodies with iatrogenic nature e.g: stent fragments, suprapubic cystostomy catheter, embolisation glue material, guidewire introducer, nonabsorbable sutures, aortoiliac graft migration; external object e.g: gunshot pellets, grenade fragment, materials inserted for autoerotism, toothpick, acupuncture needle; dietary foreign bodies such as chicken bone or as in our case a fish bone (1, 9-24). We reviewed the literature and could only find one case report in the indexed English literature where hydronephrosis was caused by intra-abdominal abscess from cecal perforation by an ingested fish bone (23). The peculiarity of our case is the total absence of gastrointestinal symptoms related with the perforation of the intestinal loop and migration to the right ureter causing there the damage. The very slow migration of the fishbone may probably explain the absence of symptoms in this case (25).

3.2. Fish bone as a foreign body

Patients may present with a 'foreign body' feeling in the throat after eating fish but the rates of actual fish bone presence is ~20%. Risk factors for accidental foreign bodies ingestion include: the use of dentures, rapid eating, extremes of age, alcohol abuse and mental retardation, intrinsic bowel pathology etc. (26,27).

Fish bone ingestion is especially frequent in lake city population of our country in which filleted fish is a culinary delicacy. The bones are frequently ingested accidentally and forgotten (28). This problem is compounded because there may be a time lag of months or even years between ingestion and the onset of symptoms (29). In contrast, accidental ingestion of non-dietary is a more dramatic event and impresses itself vividly on the patient's memory (29). The inability to obtain a history of foreign bodies ingestion and its wide spectrum of nonspecific clinical presentations makes dietary foreign bodies extremely difficult to diagnose. In our case the patient didn't remember a recent incident in which he accidentally ingested a fish bone, but he affirmed he was a fish consumer.

3.3. The role of CT in detection of fish bones

Different studies have shown that CT scan is an extremely accurate, non-invasive diagnostic tool with a high positive predicted value for the detection of fish bones (30). One limitation of CT in the detection of fish bones may be the lack of observer awareness. Without a high index of suspicion, a foreign body can be missed or mistaken for another structure, such as a blood vessel (30). Another potential limitation of CT is scanning thickness. Use of thinner CT slices allows reviewers to better trace structures such as blood vessels and differentiate them from opaque foreign bodies. The CT scans used in our case were obtained with standard 5 mm slices and with multiplanar reconstructions.

4. Conclusion

Foreign bodies are rarely found in ureter. They may enter the ureter directly from outside the body, from the kidney, intestines or bladder. When evaluating patients with urological complaints, foreign bodies should also be considered. High suspicion, early diagnosis and prompt treatment are important in the management of a foreign body in urological practice. This case showed the utility of CT in the detection of a fish bone as a cause of ureteral obstruction, urinoma and sepsis and the superiority of CT over clinical history and other examinations. Surgical retrieval of a foreign body may be required, particularly when there is a severe associated inflammatory reaction.

5. References


