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Original Research Paper

General Surgery

MUCOCELE OF APPENDIX : A DIAGNOSTIC CHALLENGE

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ABSTRACT Mucocele of appendix is a rare disease and its correct diagnosis before surgery is very important for the selection of adequate surgical treatment. If mucocele is treated incorrectly pseudomyxoma peritonei, which is characterized by a malignant process, may develop. We present a case of a 55 year old male patient who was admitted with mass per abdomen, initially diagnosed as mesenteric cyst on ultrasonography, later found to be a mucocele of appendix on contrast enhanced computed tomography. Open surgery was performed and a cystic mass of appendix with dimensions 8x3cms was noted. Appendectomy was done along with 0.5cm of adherent cecal wall all around and cecum was closed by primary repair. Histopathology of the specimen confirmed the diagnosis and post operative period was uneventful.

KEYWORDS :

INTRODUCTION :

Mucocele was first described by Rokitansky [1]. It is the term used to describe a dilated mucus filled appendix. Incidence ranges between 0.2-0.7 % of all excised appendixes [2]. This condition can have benign and malignant processes.

This disease does not have a typical clinical picture . Sometimes the patient has pain in the right lower quadrant of the abdomen , which is mistaken for acute appendicitis , which is one of the most common surgical diseases [2,3,4]. It is important to differentiate between these two pathologies before surgery and select adequate surgical tactics, We present a case of a 55 year old male patient ,admitted with mass per abdomen under evaluation and progress of the patient, surgical approach and intervention done at our institution.

Case Presentation :

A 55 year old male patient presented with mass in the right lower abdomen for 2 months - gradual onset , associated with intermittent colicky type pain. No History of Vomiting/ Constipation / Loose stools/Fever. No History of Loss of appetite / Loss of weight. Known case of Diabetes mellitus - controlled with medication. History of Open surgery in Right iliac fossa (RIF) , for RIF pain (no documents available) ,done 12 years ago. History of chronic alcoholism present. On Examination - 5x3 cm firm mass palpated in the right iliac fossa region with no local rise of temperature or tenderness ; well healed oblique surgical scar noted in RIF ; No signs of guarding or rigidity. Per rectal examination was normal.

Clinical Course :

BLOOD TESTS	Hemoglobin - 12 g/dl WBC - 9,300/mm3 PLC - 2.4 lakhs Creatinine - 0.8 mg/dl
ULTRASONOGRAPHY OF ABDOMEN	Cystic lesion measuring 4.2x2.8 cm in right iliac fossa in relation to terminal ileum and ileocecal junction - ? Mesenteric cyst
COMPUTED TOMOGRAPHY (CT) OF ABDOMEN - PLAIN	Well defined cystic lesion measuring 3.4 x 3 x 4.2 cm in right lumbar region , adjacent to ascending colon - likely Mesenteric cyst.
CECT (Contrast Enhanced CT) ABDOMEN AND PELVIS	Evidence of blind ending tubular structure measuring 6 x 1.3 cm , noted arising from ? Cecum , with thin enhancing walls - suggestive of Mucocele of Appendix.
GROSS PATHOLOGY	Appendectomy specimen measuring 6.5x2.5x2 cm , along with mucinous material ; external surface covered with mucoid material with areas of congestion noted. Lumen filled with mucinous material, friable gray-yellow area noted with papillary excrescence noted at the base, on cut section
HISTOPATHOLOGY REPORT	Dilated lumen of appendix with mucin secretions, mucosa lined by columnar epithelium with basally placed nucleus, at places show plenty of foreign body type of giant cells and lymphoplasmacytic infiltrates .Also seen areas of cholesterol clefts. Muscularis propria shows mixed inflammatory cell infiltrates with lymphocytes , plasma cells and eosinophils. Serosa shows few congested blood vessels with no granulomas and atypia in biopsy submitted - suggestive of Mucocele of appendix

DISCUSSION :

Mucocele is a descriptive term , referring to the dilatation of the appendix with mucin. Most commonly caused by epithelial proliferation (benign or malignant). Less frequently, inflammatory or obstructive causes like appendicitis or obstruction by fecalith . There are four histological types : Retention cyst ; Mucosal hyperplasia ; Mucinous cystadenoma ; Mucinous cystadenocarcinoma [5,6].

In about 50% of the cases, it is discovered as an incidental finding. Symptoms may include pain in the right lower quadrant of the abdomen, palpable abdominal mass, weight loss, vomiting, nausea, gastrointestinal bleeding [2,3,7].Preoperative diagnosis is very important for the selection of an adequate surgical method to prevent peritoneal

dissemination.Imaging tests such as ultrasonography , CT may suggest the presence of mucocele , which helps define the treatment. On ultrasound - cystic lesion seen in the lower quadrant of abdomen with a liquid content of variable echogenicity , according to the density of mucus [8]. CT shows typical features of cystic mass with thin walls and of low density , which communicates directly with the cecum. The presence of curvilinear calcification in this wall differentiates it from appendicular abscess [9].

One of the cardinal principles of surgical treatment of this disease is that intact mucoceles do not pose a threat to the patient. If it is perforated and the filling turns up in the peritoneal cavity, there is a high probability that pseudomyxoma peritonei will develop, for which treatment is very problematic and long-term results are quite unsatisfactory [7,10,11] . There is a 6 times increased risk of developing adenocarcinoma of the large bowel, in cases of mucocele.

An algorithm for the selection of the type of surgery has been furnished by Dhage-Ivatury and Sugarbaker [10]. It envisages several factors: (1) whether or not a mucocele is perforated; (2) whether the base of the appendix (margins of resection) is involved in the process; and (3) whether there are positive lymph nodes of mesoappendix and ileocolic. As a result patients may require different operations: appendectomy to the right colectomy, including cytoreductive surgery, heated intraoperative intraperitoneal chemotherapy, early postoperative intraperitoneal chemotherapy [10].

In our patient , intraoperatively there was a cystic lesion of 8x3 cm seen arising from the cecum with flimsy adhesions to surrounding bowel loops ; it was carefully separated , adhesiolysis done and on removing it , part of the lesion ruptured - however spillage was avoided , owing to mops kept below the swelling , prior to beginning separation. Dilated base of the appendix was adherent to cecal wall and could not be separated, hence, cecal wall was included for 0.5 cm margin all around. Cecum closed by primary repair in 2 layers with inner Chromic Catgut 2-0 and outer layer of Vicryl 2-0. Specimen sent for histopathology.

Patient had an uneventful postoperative period ; diet was allowed after 5 days as a precautionary measure as cecum was opened, while the patient was managed with supportive care and nutritional support. Patient was followed up 4 weeks postoperatively.

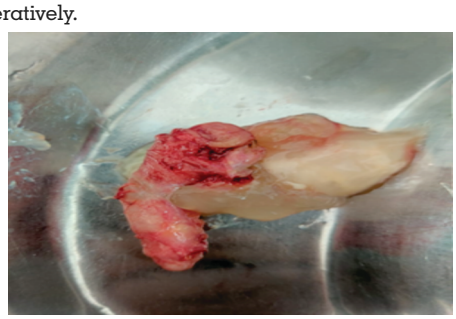

Fig. 1 Specimen.

Fig. 2 Intraoperative picture of Mucocele of appendix.

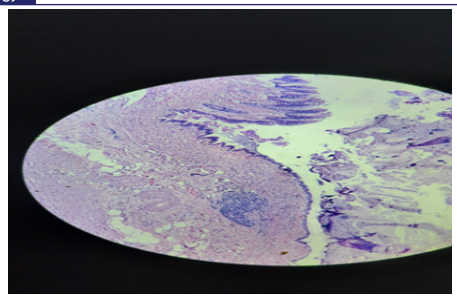

Fig. 3 Histopathology of specimen.

CONCLUSION :

This case is reported owing to diagnostic difficulty and its scarce occurrence. Based on the history and examination, a provisional diagnosis of Mesenteric Cyst, Desmoid cyst was made, the former being complemented by preliminary imaging modalities. However, CECT suggested it to be Mucocele of Appendix,which was later confirmed intraoperatively.

It is therefore inferred that primary repair of cecum in 2 layers with adequate postoperative care and nutritional support , along with complete surgical excision of the mucocele yields positive outcomes , with good patient recovery.

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