

## CASE REPORT

# Appendicular Mucocele—A Diagnostic Dilemma: Managed Laparoscopically

<sup>1</sup>Bansal Darpan, <sup>2</sup>Bhangu Gurpreet, <sup>3</sup>Sachdeva Kamal

## ABSTRACT

Appendicular mucocele is obstructive dilatation of the appendicular lumen by mucinous secretions. In most of the cases, it is caused by *Mucinous cystadenoma* and rarely by *Mucinous cystadenocarcinoma*. This rare disorder has a varied clinical presentation, with more than half of the patients being asymptomatic. We report the case of a 65-year-old man who presented with intermittent abdominal colicky pain and altered bowel habits. In spite of extensive preoperative investigations, no definitive diagnosis was made. On diagnostic laparoscopy it was found to be appendicular mucocele. We electively performed a laparoscopic appendectomy. As there is a risk of malignancy in the mucocele, we used an endobag to retrieve the specimen. Histological examination confirmed it as a *Mucinous cystadenoma*.

**Keywords:** Appendix, Laparoscopy, *Mucinous cystadenoma*, Mucocele.

**How to cite this article:** Darpan B, Gurpreet B, Kamal S. Appendicular Mucocele—A Diagnostic Dilemma: Managed Laparoscopically. *Curr Trends Diagn Treat* 2017;1(1):38-39.

**Source of support:** Nil

**Conflict of interest:** None

## INTRODUCTION

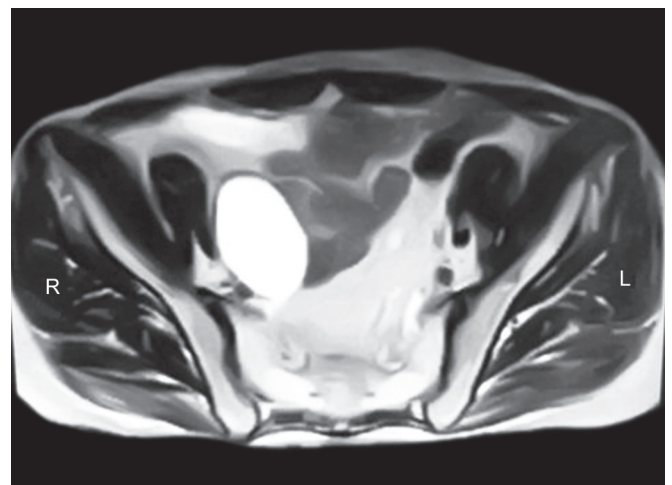
Appendiceal mucocele is an uncommon pathology of the appendix (0.15–0.6% of all appendectomies) characterized by obstructive dilatation of the appendicular lumen by mucinous secretions.<sup>1</sup> *Mucinous cystadenoma* and *Mucinous cystadenocarcinoma* accounts for about 60 to 70% of all mucoceles. Other causes are retention cyst, mucosal hyperplasia, carcinoid, appendicolith, endometriosis, adhesions and volvulus. The patient is often (23–50%) asymptomatic or presents with nonspecific symptoms, such as weight loss, abdominal pain/mass, altered bowel habits, acute appendicitis, or rectal bleeding. Though preoperative diagnosis is essential, but sometimes, despite preoperative investigations, the diagnosis may still remain elusive and may only be made

at the time of surgery. The management of mucocele is necessary because of the risk of rupture and associated pseudomyxoma peritonei, which consists of most dangerous complication. Surgical treatment is mandatory and surgical options ranges from simple appendectomy to right hemicolectomy.

## CASE REPORT

A 65-year-old man presented with history of intermittent colicky abdominal pain and altered bowel habits since 3 months. The abdominal examination was normal and no lump was palpable. Laboratory analysis results were within the normal limits. Before coming to our institute, the patient had already undergone ultrasonography (USG), computed tomography (CT), and magnetic resonance imaging (MRI) of abdomen. The CT scan revealed 55 × 47 mm hypodense lesion in right pelvic region suggestive of intussusceptions. The MRI revealed 64 × 40 mm homogenous cystic hyperintense mass in right iliac extending to right pelvis, mesenteric cyst (Fig. 1).

As none of the investigations gave a conclusive diagnosis, diagnostic laparoscopy was planned. On laparoscopy, there was a dilated appendix in the subcecal location (Fig. 2). There was no lymphadenopathy in the ileocecal region. The peritoneal surfaces did not show any metastatic deposits, and cecum was grossly normal. So we decided to proceed with laparoscopic appendectomy. Every attempt was made to handle the appendix with

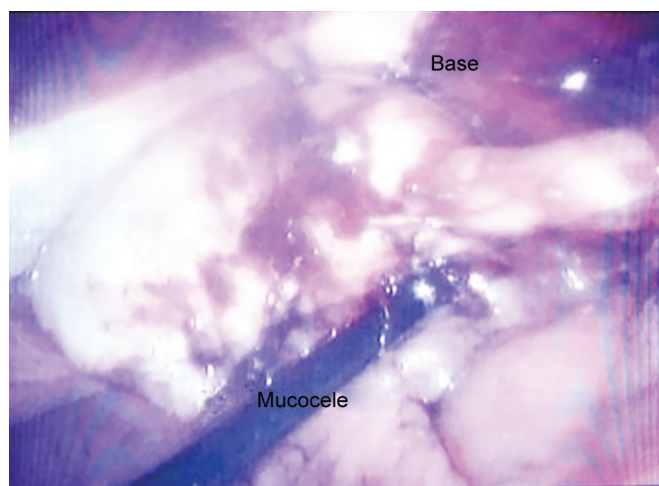


**Fig. 1:** Preoperative MRI showing hyperintense cystic mass in relation to small gut in right pelvis, mesenteric cyst

<sup>1,2</sup>Assistant Professor, <sup>3</sup>Junior Resident

<sup>1-3</sup>Department of General Surgery, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, Punjab, India

**Corresponding Author:** Bansal Darpan, Assistant Professor Department of General Surgery, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, Punjab, India Phone: +919780377345, e-mail: bhatidarpan27@gmail.com



**Fig. 2:** Intraoperative view of mucocele appendix

atraumatic graspers, tugging mainly on the mesoappendix. After clipping the appendicular artery, knotting was used to negotiate the appendicular base. Appendectomy was completed and the specimen was removed in an endobag through the umbilical port. The resected specimen revealed presence of mucous in the lumen and the diagnosis of mucinous cystadenoma of appendix was confirmed by histopathology. The postoperative period was uneventful and the patient was discharged on 3rd postoperative day.

## DISCUSSION

Mucocele of the appendix was first described by Rokitan-sky.<sup>2</sup> It is more common in females, with male to female ratio of 4:1. The average age of presentation for benign mucocele was 54 years and for malignant disease, age is 64 years.<sup>3</sup> The most common presentation of symptomatic appendiceal mucocele patients is acute or chronic right lower quadrant abdominal pain, as occurred with our patient.<sup>4</sup> A correct preoperative diagnosis of appendiceal mucocele is difficult due to the nonspecific symptoms. Radiological investigations including USG, CT, and colonoscopy have all been used to describe these tumors but none of these is entirely conclusive.<sup>5</sup> In our case too, neither ultrasound nor CT scan could provide a preoperative diagnosis. Laparoscopic surgery, being both diagnostic and therapeutic, provides the advantages of good exposure and evaluation of entire abdominal cavity, as well as more rapid recovery with avoidance of a large incision and a better cosmetic outcome. However, careful handling of the specimen is recommended as spillage of the contents can lead to pseudomyxomaperitonei.<sup>6</sup>

Conversion to laparotomy should be considered if the lesion is traumatically grasped or if the tumor clearly extends beyond the appendix or if there is evidence of malignancy, such as peritoneal deposits.<sup>6</sup> Dhage-Ivatury and Sugarbaker<sup>7</sup> have developed an algorithm for the selection of the type of surgery. 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 treatment options: Appendectomy to right hemicolectomy, cytoreductive surgery, heated intraoperative intraperitoneal chemotherapy, early postoperative intraperitoneal chemotherapy.<sup>7</sup> In our patient, the mucocele was not perforated (no discharge into the peritoneum cavity), there was no pathologic process in the base of the appendix (negative margins of resection), and the regional lymph nodes were negative. Therefore, only appendectomy was performed, which is an adequate surgery in such a case.

In conclusion, appendiceal mucocele provides a diagnostic challenge both because of its rarity and varied presentation. In the era of minimally invasive procedures, the laparoscopic approach allows diagnostic evaluation and appendectomy to be performed and confers advantages of short hospital stay and decreased recovery period, particularly in patients with comorbid conditions.

## REFERENCES

1. Marudanayagam R, Williams GT, Rees BI. Review of the pathological results of 2660 appendectomy specimens. *J Gastroenterol* 2006 Aug;41(8):745-749. PMID: 16988762. doi: 10.1007/s00535-006-1855-5.
2. Rokitan-sky, C.F. A manual of pathological anatomy. Vol. 2. Philadelphia, PA: Blanchard & Lea; 1855.
3. Kalu E, Croucher C. Appendiceal mucocele: A rare differential diagnosis of a cystic right adnexal mass. *Arch Gynecol Obstet* 2005 Jan;277(1):86-88.
4. O'Sullivan MJ, Kumar U, Kiely EA. Ureteric obstruction with mucocele of the appendix due to endometriosis. *BJOG* 2001 Jan;108(1):124-125.
5. Shukunami K, Kaneshima M, Kotsuji F. Preoperative diagnosis and radiographic findings of a freely movable mucocele of the vermiform appendix. *Can Assoc Radiol J* 2000 Oct;51(5):281-282.
6. Navarra G, Asopa V, Basaglia E, Jones M, Jiao LR, Habib NA. *Mucous cystadenoma* of the appendix: Is it safe to remove it by a laparoscopic approach? *Surg Endosc* 2003 May;17(5):833-834.
7. Dhage-Ivatury S, Sugarbaker PH. Update on the surgical approach to mucocele of the appendix. *J Am Coll Surg* 2006;202(4):680-684.