

## None Resolving Appendicular Mass: A Rare Case Report

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**Abstract:** At present, the treatment of choice for uncomplicated acute appendicitis in adults continues to be surgical. The inflammation in acute appendicitis may sometimes be enclosed by the patient's own defense mechanisms, by the formation of an inflammatory phlegmon or a circumscribed abscess. The management of these patients is controversial. Immediate appendectomy may be technically demanding. The exploration often ends up in an ileocecal resection or a right-sided hemicolectomy. Recently, the conditions for conservative management of these patients have changed due to the development of computed tomography and ultrasound, which has improved the diagnosis of enclosed inflammation and made drainage of intra-abdominal abscesses easier. New efficient antibiotics have also given new opportunities for nonsurgical treatment of complicated appendicitis. The traditional management of these patients is nonsurgical treatment followed by interval appendectomy to prevent recurrence. The need for interval appendectomy after successful nonsurgical treatment has recently been questioned because the risk of recurrence is relatively small. After successful nonsurgical treatment of an appendiceal mass, the true diagnosis is uncertain in some cases and an underlying diagnosis of cancer or Crohn's disease may be delayed. This report aims at reviewing the treatment options of patients with enclosed appendiceal inflammation, with emphasis on the success rate of nonsurgical treatment, the need for drainage of abscesses, the risk of undetected serious disease, and the need for interval appendectomy to prevent recurrence.

**Keywords:** Appendicitis, Abscess, Computed tomography,

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### I. Introduction

Acute appendicitis is one of the most common causes of acute abdomen and can be classified into uncomplicated and complicated. The life-time risk of appendicitis is 7%-8%, with the highest incidence in the second decade. Primary appendicular tumors occur in **0.9% to 1.4%** of all appendectomies. <50% of cases are recognized pre-operatively. Almost **85% are carcinoids**. Adenocarcinomas of the appendix are a category of rare tumors of the gastrointestinal tract, with a frequency of 0.2% - 0.5% of all intestinal malignancies and 4% - 6% over neoplastic lesions of the appendix. The first case of a primary adenocarcinoma of the appendix was reported by Berger<sup>1</sup> on 1882 Their main presentation is that of an **acute appendicitis or as a palpable mass**, mainly in the right lower quadrant.

The inflammation in acute appendicitis may sometimes be enclosed by the patient's own defense mechanisms, by the formation of an inflammatory phlegmon or a circumscribed abscess. The management of these patients is controversial. Immediate appendectomy may be technically demanding because of the distorted anatomy and the difficulties to close the appendiceal stump because of the inflamed tissues. The exploration often ends in ileocecal resection or a right-sided hemicolectomy due to the technical problems or a suspicion of malignancy because of the distorted tissues. Recently, the conditions for conservative management of these patients has changed due to the development of computed tomography (CT) and ultrasound (US), which has improved the diagnosis of enclosed inflammation and made drainage of intra-abdominal abscesses easier. New efficient antibiotics have also given new opportunities for nonsurgical treatment of appendicitis. The traditional management of these patients is nonsurgical treatment followed by interval appendectomy to prevent recurrence. The need for interval appendectomy after successful nonsurgical treatment has recently been questioned because the risk of recurrence is relatively small. After successful nonsurgical treatment of an appendiceal mass, the true diagnosis is uncertain in some cases and an underlying diagnosis of cancer or Crohn's disease (CD) may be delayed. This report reviews the treatment options of patients with enclosed appendiceal inflammation, with emphasis on the success rate of nonsurgical treatment, the need for drainage of abscesses, the risk of undetected serious disease, and the need for interval appendectomy to prevent recurrence.

## II. Observations:

A 50 year-old woman presented to the General Surgery department with complaint of pain in the lower abdomen since 10 days. Pain in right lower quadrant, insidious in onset, gradually progressive in nature, no radiation of pain, no aggravating factors. H/o of fever for 2 days, continuous, high grade. Pain & fever subsided on medication after 2 days of onset of symptoms. The patient was initially treated by a R.M.P for 10 days. As there is recurrence of pain after 10 days, she was referred to NRIGH for further management. Patient is conscious, oriented, moderately built & moderately nourished. *pallor+*, no icterus, no cyanosis, no clubbing, no significant lymphadenopathy. Vitals stable. **Per Abdomen –Inspection- fullness noted in the right lower quadrant.** Lower midline vertical scar is present. (Figure -1) Abdominal striae are present. Umbilicus is central in position & inverted. No visible pulsations, no dilated veins, no visible peristalsis. Renal angles are normal. Hernial sites & external genitalia are normal.

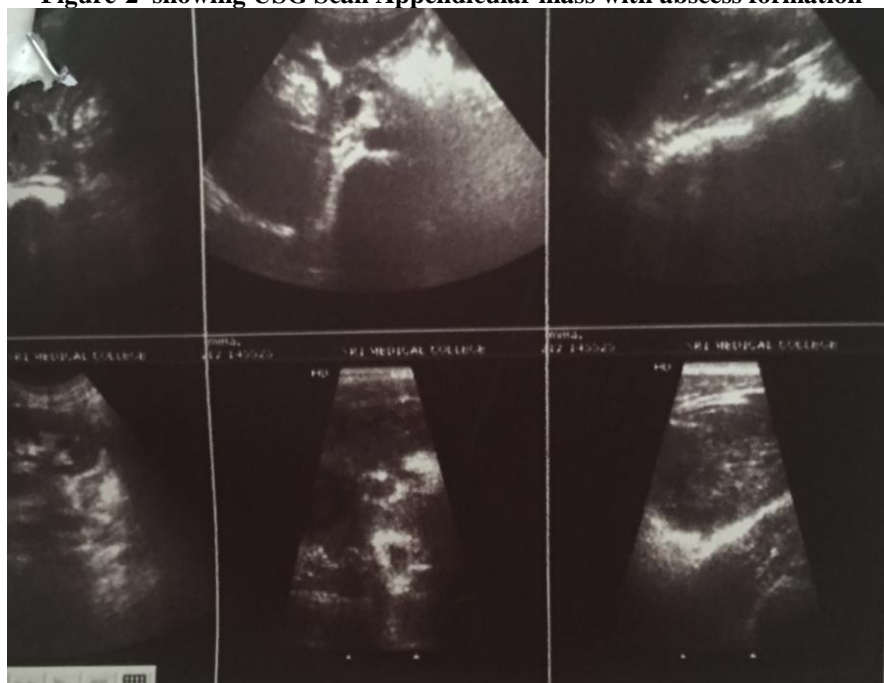
Fig-1



On palpation **palpable mass of size 8 × 10cms in the right iliac fossa**, minimal tenderness is present, surface is smooth, margins are well defined, firm in consistency, intra abdominal, no mobility with respiration, no intrinsic mobility. Hernial orifices- normal. On *Percussion* – dull over the swelling, no free fluid, On *Auscultation* -Bowel sounds -normally heard.

USG scan showed 4.4 cms × 5.4 cms irregular collection in right iliac fossa. Another well defined hypoechoic lesion measuring 4.4cms × 3.8 cms is seen in right iliac fossa with thickening of adjacent mesentery. U/S guided aspiration of 20 ml pus was done.

**Figure-2 showing USG Scan Appendicular mass with abscess formation**



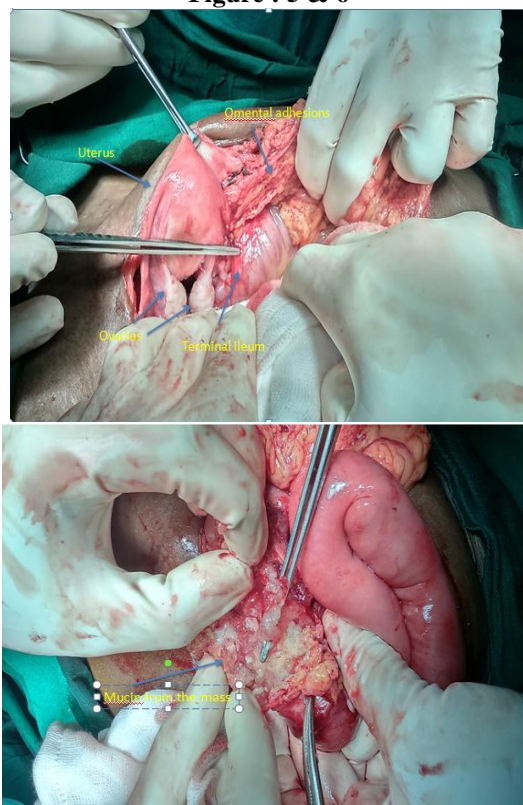
Despite following conservative management for 8 days, appendicular mass did not decrease in size. CECT abdomen was done. defined heterogeneously enhancing lesion measuring approximately  $6.1 \times 5.1$  cms noted in the right iliac fossa. The lesion shows cystic areas. Inflammatory changes with fat stranding is noted around the lesion. The inflammation is seen extending in to the anterolateral wall of urinary bladder, caecum & rectus abdominus muscle. Few enlarged lymph nodes are noted in right iliac fossa. Appendix is not visualized.

**Fig. 3 & 4 : CECT - Appendicular abscess with mass formation.**



The patient underwent for exploratory laparotomy in view of non resolving mass of appendix through a midline incision. solid mass noted posterior to the terminal ileum ( $8 \times 5$  cms). Uterus along with right ovary adherent to the mass. Lower midline incision from umbilicus to symphysis pubis. On reaching the peritoneal cavity, omental adhesions are noted. Omental adhesions were separated. Firm mass of size  $8 \times 5$  cms beneath the terminal ileum. Uterus & right ovary separated from the mass. Right colon is mobilized by incising white line of toldt.

**Figure : 5 & 6**





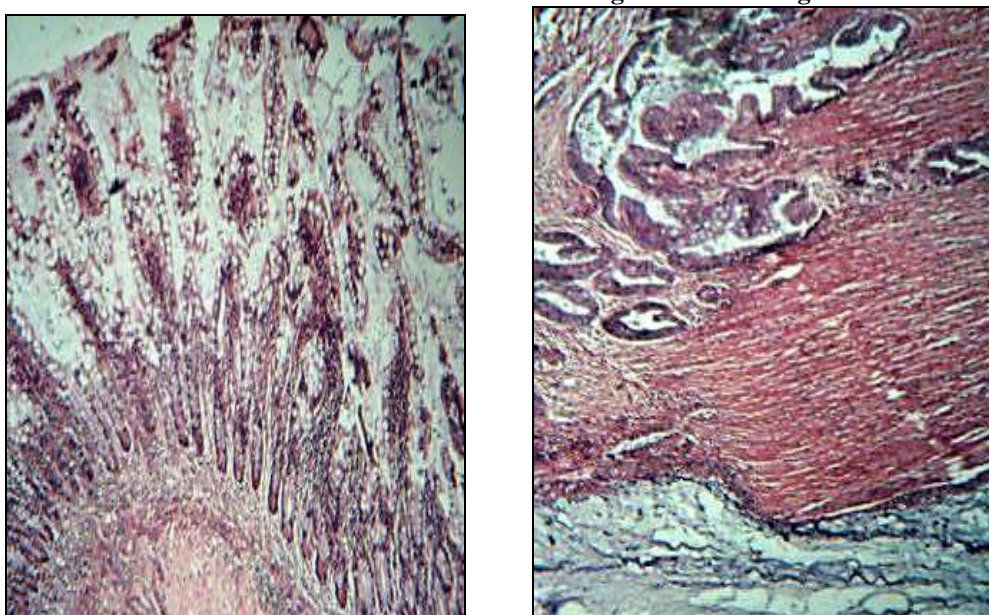
Right hemi-colectomy done after ligation of ileocolic artery, right colic artery, right branch of middle colic artery. Specimen was sent for HPE. Ileum & transverse colon are anastomosed by using PDS sutures. Hemostasis secured, drain placed in the morisson's pouch. Abdomen closed in layers.

**Figure -7 : Appendicular mass**



Cut section of tumor showed Sections studied shows a well differentiated mucin producing adenocarcinoma exhibiting transmural infiltration, serosal nodular extension, lymphovascular embolization, surface ulceration & secondary inflammation. The adjacent colonic mucosa shows features suggestive of inflammatory bowel disease with mucosal ulceration. Both the cut margins & small intestinal segment separately received show mild chronic ileocolitis changes with sub mucosal edematous widening. There is no tumor extension. All the 4 lymphnodes identified in the mesenteric fat show metastatic deposits from colonic carcinoma. – histological appearances are in favor of *well differentiated mucin producing adenocarcinoma of appendix with metastatic deposits in lymph nodes*.

**FIGURE 8 & 9 : Normal colonic mucosa & Infiltrating mucin secreting adenocarcinoma**



### III. Discussion

Primary appendicular tumors occur in 0.9% to 1.4% of all appendectomies. <50% of cases are recognized pre-operatively. Almost 85% are carcinoids. Adenocarcinomas of the appendix are a category of rare tumors of the

gastrointestinal tract, with a frequency of 0.2% - 0.5% of all intestinal malignancies and 4% - 6% over neoplastic lesions of the appendix

### WHO histological classification of tumours of the appendix<sup>1</sup>

Epithelial tumours		Non-epithelial tumours	
Adenoma	8140/0 <sup>2</sup>	Neuroma	9570/0
Tubular	8211/0	Lipoma	8850/0
Villous	8261/0	Leiomyoma	8890/0
Tubulovillous	8263/0	Gastrointestinal stromal tumour	8936/1
Serrated	8213/0	Leiomyosarcoma	8890/3
		Kaposi sarcoma	9140/3
		Others	
Carcinoma		Malignant lymphoma	
Adenocarcinoma	8140/3		
Mucinous adenocarcinoma	8480/3		
Signet-ring cell carcinoma	8490/3		
Small cell carcinoma	8041/3		
Undifferentiated carcinoma	8020/3		
		<b>Secondary tumours</b>	
		<b>Hyperplastic (metaplastic) polyp</b>	
Carcinoid (well differentiated endocrine neoplasm)	8240/3		
EC-cell, serotonin-producing neoplasm	8241/3		
L-cell, glucagon-like peptide and PP/PYY producing tumour			
Others			
Tubular carcinoid	8245/1		
Goblet cell carcinoid (mucinous carcinoid)	8243/3		
Mixed carcinoid-adenocarcinoma	8244/3		
Others			

<sup>1</sup> This classification is modified from the previous WHO histological classification of tumours (845) taking into account changes in our understanding of these lesions. In the case of endocrine neoplasms, it is based on the recent WHO classification (1784) but has been simplified to be of more practical utility in morphological classification.

<sup>2</sup> Morphology code of the International Classification of Diseases for Oncology (ICD-O) (542) and the Systematized Nomenclature of Medicine (<http://snomed.org>). Behaviour is coded /0 for benign tumours, /3 for malignant tumours, and /1 for unspecified, borderline or uncertain behaviour.

- The first case of a primary adenocarcinoma of the appendix was reported by Berger on 1882. Their main presentation is that of an **acute appendicitis or as a palpable mass**, mainly in the right lower quadrant. Approximately 30%–50% of patients present clinically with signs and symptoms of **acute appendicitis**, most often due to occlusion of the appendiceal lumen by tumor. Diagnosis of underlying tumor is usually made only at the time of surgery or even later, during pathologic examination of the surgical specimen. This delay in diagnosis often necessitates modification of the surgical approach or a second surgical procedure such as right hemicolectomy.
- Adenocarcinoma is a malignant epithelial neoplasm of the appendix with invasion beyond the muscularis mucosae. **0.12 cases per 1,000,000** appendicectomies annually. F=M .Occurs 6<sup>th</sup> decade of life. **Rarer but more aggressive type**. It is of 2 types – 1) Mucin secreting adenocarcinoma 2) Non-mucin secreting adenocarcinoma .Prognosis – poorer than carcinoid. Because of similarities with colon carcinoma, appendiceal adenocarcinomas are classified as- Duke’s stage A – 100% 5 year survival rate B – 67% ,C – 50% . D – 6% . **Mucinous adenocarcinoma** has better 5 year survival rate of 70% over 40% of colonic type of adenocarcinoma

#### IV. Conclusion

Appendicular mass should be the top of the differential diagnosis with RIF mass. Appendicular cancer is a rare, usually an incidental finding & should be suspected in any elderly person presenting with appendicitis like symptoms and signs. Non resolving appendicular mass should be explored. All appendicectomy specimen should be sent for HPE.

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