CASE REPORT

Carcinoma of Colon disguised as Apendicitis

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Abstract:

Acute appendicitis is a common surgical emergency; however, in adults it may rarely mask underlying colonic malignancy. We report the case of a 47-year-old woman who presented with history of right lower abdominal pain followed by a palpable appendiceal mass, initially managed as an appendicular lump. The absence of significant leukocytosis and persistence of the mass despite conservative management prompted further evaluation. Imaging and colonoscopy revealed a caecal mass, and biopsy confirmed adenocarcinoma. The patient underwent neoadjuvant chemotherapy followed by right hemicolectomy with primary anastomosis. This case highlights the need for suspicion of underlying malignancy in adults with atypical appendicitis and signifies the importance of multidisciplinary approaches.

Background:

Acute appendicitis is among the most frequently encountered surgical emergencies and typically presents with right lower quadrant pain, tenderness, and leukocytosis. In younger adults, diagnosis is usually straightforward, and simple appendectomy is curative. In older adults, however, appendicitis-like symptoms may occasionally mask more serious underlying pathology, including right-sided colon carcinoma.[1,2] Right-sided colon cancers often remain clinically silent until they produce complications such as obstruction or local inflammation. In rare instances, they may present as an appendiceal mass, mimicking classic acute appendicitis or appendicular lump following untreated appendicitis.[1,2] Failure to recognise these atypical presentations may delay diagnosis and adversely affect patient outcomes. This case highlights a colon adenocarcinoma presenting as appendiceal mass, emphasising careful clinical evaluation, appropriate investigations, and timely surgical intervention.

Case presentation:

A 47-year-old female presented with right lower abdominal pain for four days, which was gradually increasing in intensity. The pain was initially around umbilicus then shifted to right iliac fossa, and was associated with anorexia, low-grade intermittent fever, and vomiting. There was no history of altered bowel habits, haematochezia, melena, or weight loss. She had no past history of abdominal surgery or chronic gastrointestinal disease and there was no family history of colorectal cancer.

On examination, the patient was hemodynamically stable. Abdominal examination revealed tenderness in the right iliac fossa with a firm, non-mobile mass measuring approximately 6 × 4 cm, consistent with an appendicular mass. Mild guarding was noted, but there were no signs of generalised peritonitis. Digital rectal examination was unremarkable, and systemic examination was within normal limits.

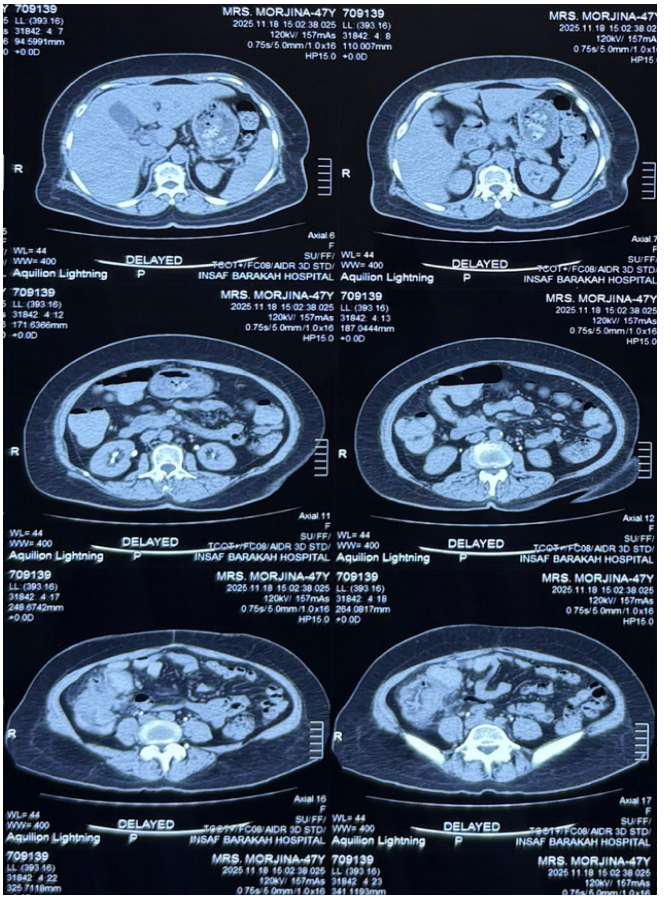
Investigations: Laboratory investigations showed haemoglobin of 11.2 g/dL, total white blood cell count of 4.8 × 10^9/L, and ESR of 32 mm/1st hour. Serum electrolytes, renal function tests, liver function tests, and random plasma glucose were all within normal limits. Ultrasonography (USG) of the abdomen revealed an inflamed appendix and a hypo-echoic mass in the right iliac fossa

corresponding to the palpable mass measuring approximately 6 × 4 cm, without evidence of perforation or abscess.

The mass was managed conservatively (Ochsner-Sherren regimen); however, despite initial partial regression, a firm residual mass persisted.

Tumour marker analysis was performed to further evaluate the persistent mass; while CA 19-9 (12 U/mL) and CA 125 (15 U/mL) were within normal reference ranges, the Carcinoembryonic Antigen (CEA) was mildly elevated at 7.2 ng/mL (Reference: < 5.0 ng/mL).

Given the atypical presentation, normal leukocyte count, persistent right iliac fossa mass, and elevated CEA, further evaluation was performed. CT (computed tomography) of the abdomen revealed a heterogeneously enhancing caecal mass (Figure 1A) with associated appendiceal inflammation (Figure 1B). Colonoscopy showed a friable, irregular lesion near the appendiceal orifice, and biopsy confirmed colonic adenocarcinoma.



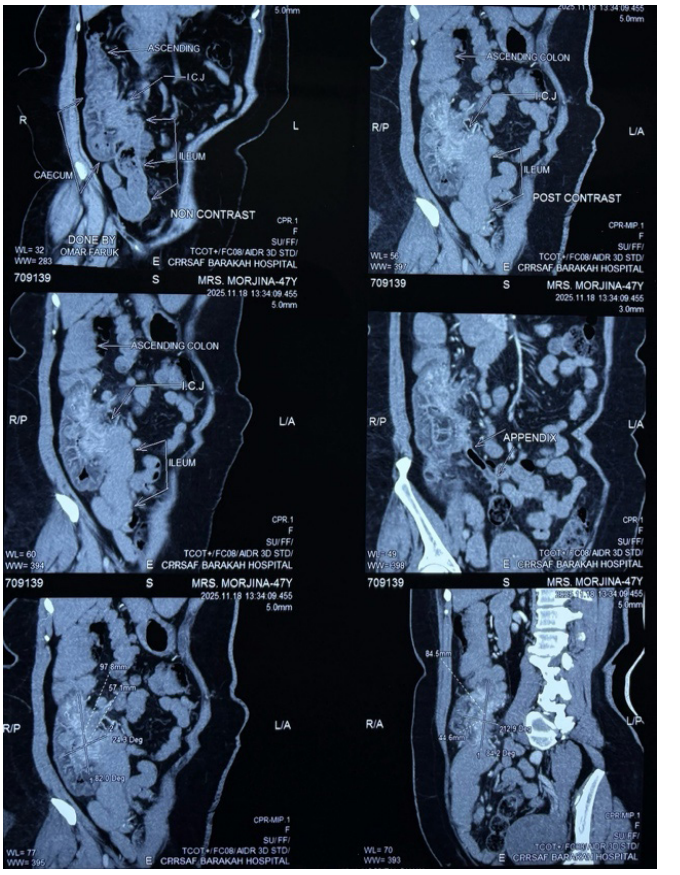


Fig- 1: Contrast-enhanced CT: (A) Axial section showing heterogeneously enhancing caecal mass; (B) Coronal and sagittal reconstructions highlighting appendiceal inflammation and pericaecal fat stranding.

Differential diagnosis: Appendicular lump following acute appendicitis: localized inflammatory mass due to partially treated appendicitis.[2]

- Caecal carcinoma: considered when the mass persisted and CEA was elevated.[3]
- Ileocaecal tuberculosis: possible in endemic regions presenting with a right iliac fossa mass.
- Crohn's disease: inflammatory ileocecal mass, less likely given stable bowel habits.

Treatment: On oncological advice, the patient received 4 cycles of neoadjuvant chemotherapy prior to surgery. This decision was made following multidisciplinary team (MDT) discussion, as imaging suggested locally advanced disease with possible involvement of adjacent structures, making

upfront R0 resection potentially challenging. The neoadjuvant treatment resulted in downsizing of the primary mass and reduction of the surrounding inflammatory component, facilitating a technically feasible R0 resection (complete microscopic clearance).

She then underwent right hemicolectomy with primary ileocolic anastomosis via a midline laparotomy. Intraoperative exploration confirmed a significant response to chemotherapy, with the primary tumour downsized to a 4 × 3 cm firm mass. The base of the appendix was grossly inflamed and densely adherent to the caecal wall, but no hepatic metastasis or peritoneal seeding was found. The procedure involved mobilisation of the right colon, wide excision of the mesentery, and ligation of ileocolic and right colic vessels at their origins for oncological clearance. Approximately 10 cm of terminal ileum and ascending colon were resected, and continuity was restored via primary side-to-side ileocolic anastomosis. The specimen was sent for histopathology.

Post-operative histopathological examination of the right hemicolectomy specimen with part of mesentery revealed a moderately differentiated adenocarcinoma (Grade 2) of the colon. The tumour was seen invading through the muscularispropria into the pericolonic soft tissue. The growth showed an ulcerated surface with areas of haemorrhage. All surgical resection margins, including the proximal, distal, and circumferential margins, were free of tumour. Lymphovascular invasion was present, while perineural invasion was not identified. The appendix revealed signs of acute-on-chronic inflammation consistent with luminal obstruction. However, the appendix was free of direct malignant infiltration, confirming that the inflammatory presentation was secondary to the caecal mass obstructing the appendiceal orifice. A total of 12 regional lymph nodes were identified and examined, showing reactive hyperplasia with no evidence of disease (0/12).[7]

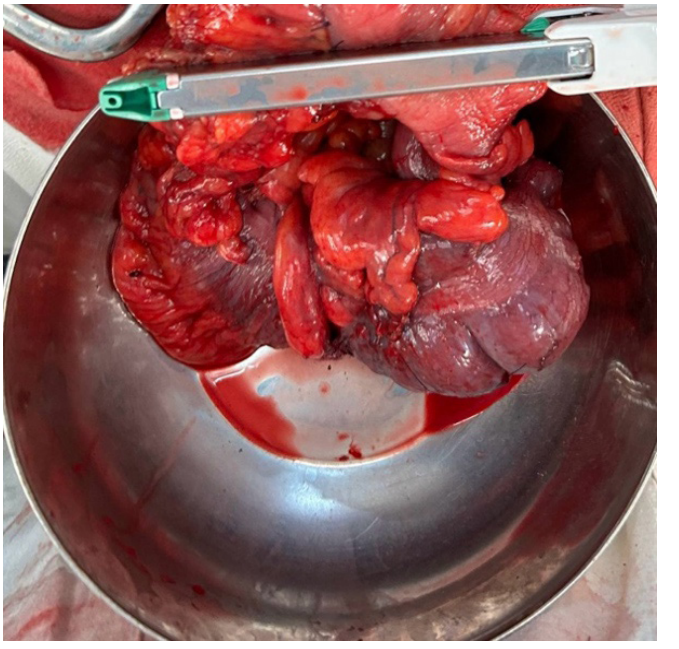


Fig- 2: Gross view of the resected right hemicolectomy specimen.

Overall features were consistent with adenocarcinoma of the right colon, Grade 2, with pathologic staging of ypT3N0M0.

Postoperatively, the patient's recovery was uneventful. She tolerated oral intake within 48 hours, and her abdominal pain improved significantly. Following the histopathological confirmation of a ypT3N0M0 lesion, she was referred back to the oncology department for completion of her treatment plan. Following the completion of her adjuvant chemotherapy cycles, the patient is in good clinical condition. In accordance with standard oncological guidelines (NCCN),[10] her long-term surveillance includes:

- Clinical review every 3–6 months for 2 years, then every 6 months up to 5 years
- Serum CEA testing every 3–6 months for 2 years, then 6-monthly for 5 years
- Annual contrast-enhanced CT scans of the chest, abdomen, and pelvis for a minimum of 3 years
- Surveillance colonoscopy at 1-year post-surgery

Outcome and follow-up: At latest follow-up, the patient remains asymptomatic, has resumed

normal daily activities, and shows no evidence of recurrence.

Discussion:

Acute appendicitis is a common surgical emergency, usually straightforward to diagnose in younger patients. In adults, however, appendicitis-like symptoms may occasionally mask underlying colonic pathology, particularly right-sided colon carcinoma.[3],[9]Although colorectal cancer is traditionally considered a disease of older adults, several studies have shown that it can also occur in younger patients and may present atypically, often leading to delayed diagnosis and poorer outcomes.[7],[8] Right-sided colon cancers can remain clinically silent for long periods and may present only when complications such as luminal obstruction or localised inflammation occur. On rare occasions, these malignancies manifest as a caecal mass, which complicates the clinical differentiation from a standard appendicular lump.[1],[2]

In this patient, the presentation of right lower quadrant pain with a palpable appendiceal mass, combined with normal leukocyte counts and mildly elevated ESR, was atypical for simple appendicitis. These features prompted further evaluation with imaging and colonoscopy, as CT findings of appendiceal dilation or wall thickening can sometimes be misleading and mask an underlying malignancy.[4],[5] Furthermore, several radiological pitfalls have been documented where caecal pathologies are misidentified as primary appendicitis on initial scans.[6] Colonoscopy was performed to clarify the diagnosis, which identified a friable caecal lesion near the appendiceal orifice, which biopsy later confirmed as adenocarcinoma.

This case highlights the importance of maintaining a high index of suspicion in adults with atypical appendicitis, particularly when lab and imaging findings do not fully correlate with clinical symptoms. Colonoscopy is crucial in such scenarios, allowing direct visualisation, targeted biopsy, and appropriate surgical planning.[2] Management with neoadjuvant chemotherapy followed by right hemicolectomy with primary anastomosis ensured optimal tumour clearance. Histopathology confirmed caecal adenocarcinoma. The tumour's proximity to the caecal pole resulted in extrinsic compression and obstruction of the appendiceal lumen. This mechanical obstruction triggered the secondary inflammatory process that mimicked a classic appendicular lump.

Conclusion:

Colon cancer can rarely present as acute appendicitis, particularly in adults with atypical clinical or laboratory features. Critical diagnostic indicators in this instance were the failure of the palpable mass to resolve under the Ochsner-Sherren regimen, the absence of leukocytosis, and a poor correlation between clinical severity and imaging findings.[1]

Early recognition of these nuances is vital. A thorough evaluation involving high-resolution imaging, tumour markers, and colonoscopy is essential to differentiate a benign appendicular lump from underlying malignancy. Furthermore, this case highlights how a multidisciplinary approach combining neoadjuvantdownstaging with oncological surgical resection ensures optimal patient outcomes. The integration of pathological staging and clinical findings remains the gold standard for guiding post-operative surveillance and adjuvant therapy. This case serves as a vital reminder that while appendicitis is common, it should remain a diagnosis of exclusion in the aging population until underlying malignancy is definitively ruled out. Rigorous adherence to standardised follow-up protocols is essential to detect potential recurrence early and improve long-term survival rates in these patients. Ultimately,a meticulous approach to atypical appendiceal presentations is mandatory to prevent the misdiagnosis of an underlying right-sided colonic malignancy.

Learning Points:

- Always rule out colon cancer in adults with atypical appendicitis.

- Investigate appendiceal masses unresponsive to conservative treatment.
- Use CT and colonoscopy to differentiate inflammation from malignancy.
- Combine neoadjuvant chemotherapy and radical surgery for optimal clearance.

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