



## Radio-Diagnosis

## A TROJAN HORSE NEVER TO BE MISSED IN ELDERLY – AN INTERESTING CASE OF RIGHT ILIAC FOSSA MASS

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**ABSTRACT** We report a case of an elderly patient presenting with the right iliac fossa mass. The provisional diagnosis included an inflammatory appendicular mass or abdominal wall mass. Interestingly, initial non-contrast computed tomography (CT) of the abdomen and pelvis, lap parameters and colonoscopy guided biopsy demonstrated the inflammatory changes. Follow up imaging by contrast CT threw light on a new path towards the neoplastic etiology. Even after the follow up imaging the subsequent colonoscopy guided biopsy showed features suspicious for malignancy whereas cystoscopy guided biopsy showed benign features. Intra-operatively bowel neoplasm with bladder invasion was seen and right hemicolectomy with partial cystectomy done. Post-operative specimen finally revealed mucinous adenocarcinoma of caecum with urinary bladder invasion. In the presented case, non-contrast CT findings and clinico-pathological reports suggestive of a benign etiology were misleading. This could have been prevented if the patient was subjected to contrast study in view of her elderly age. This case highlights the importance of imaging in patient management. Therefore, we feel that it is important to share our experience of the successful management of the presented case.

## KEYWORDS :

## INTRODUCTION

This is a case report of mucinous adenocarcinoma of caecum which on initial presentation mimicked an inflammatory etiology in clinical, non-contrast radiological and pathological evaluations. However, careful and complete pre-operative imaging revealed the missed diagnosis of early carcinoma in the advanced stage invading the urinary bladder and ileal wall. This case emphasizes the importance of complete contrast imaging even when the clinico-pathological picture states an inflammatory process in the elderly age group.

## CLINICAL INFORMATION

An 88 year old elderly woman was referred from the department of general surgery for sonological evaluation. She presented with complaints of fever, abdominal pain, and vomiting for a duration of one month. She was treated outside as a case of appendicular mass based on imaging by non-contrast CT.

She was followed up outside by an ultrasonogram done 1 week after the initial CT, which also revealed features consistent with an appendicular abscess. Followed by which she was started on antibiotics. Post 1 week of antibiotics, repeat ultrasound was done showing imaging features of resolving lateral wall abscess. After 3 weeks of asymptomatic period, normal diet intake, normal bowel habits and absent fever spikes, she was tapered from intravenous to oral antibiotics.

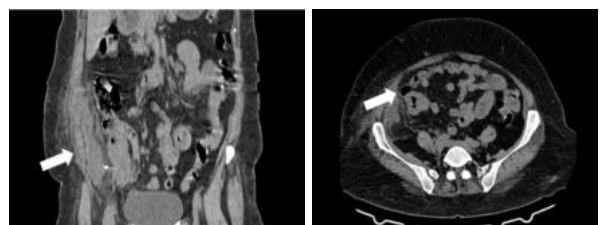
After this she presented to general surgery department of P.I.M.S. for further management. She presented with on and off vague abdomen pain in right iliac fossa with no history of loss of weight/appetite, no history of malena/hematochezia. On examination there was mild tenderness in right iliac fossa. A mass of size ~10 x 15 cm was palpable in right lower quadrant of abdomen.

Past history of L4-L5 intervertebral disc disease; hysterectomy 17 years back; not a known case of Diabetes mellitus, Systemic Hypertension, Tuberculosis, Bronchial asthma.

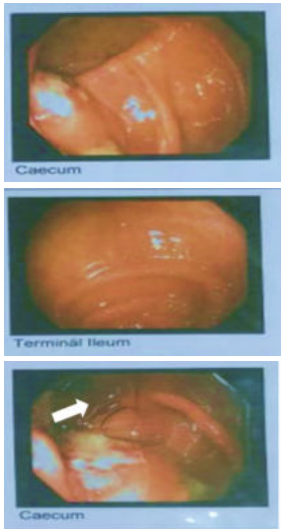
Ultrasonogram done 1 month after initial computed tomography showed a partly well defined thin walled hypoechoic intraperitoneal collection measuring ~ 7.9x3.2x2.5 cm (volume ~33cc) in the right iliac fossa region with surrounding inflammatory changes with no obvious internal vascularity. Another ill-defined collection measuring ~4.4 x 4.0 x 3.0 cm (volume ~26cc) was noted deeper to the above mentioned collection. On color Doppler, no obvious internal vascularity within. After this, she was prescribed antibiotics for one week.

On her subsequent follow ups there was interval decrease in size of the palpable mass with no bowel symptoms. Despite the inflammatory picture; In view of her age, she was referred to gastroenterology for colonoscopy guided biopsy to rule out the possibility of malignancy. On follow up clinical examination by gastroenterologist, there was a significant interval decrease in the size of palpable mass from 10 cm to 4cm. Gastroenterologist referred for follow up ultrasound for pre-procedural assessment. Follow up ultrasound shows that there is no significant interval change in the size of the larger collection, whereas there is mild interval reduction in the size of the smaller collection.

Colonoscopy findings Viewed up to the caecum and distal 10 cm of the terminal ileum showed adherent mucopus seen in the pole of the caecum with some altered blood and mild mucosal erythema and edema. Appendicular orifice not visualized. Rest of the colon appeared normal and findings are consistent with appendicitis and appendicular mass.



**Figure 1 :** A and B – Axial and Coronal sections of Non-contrast CT abdomen&pelvis showing an ill-defined curvilinear shaped hypodense fluid collection noted along the right lateral wall of abdomen predominantly involving the internal oblique & transverse abdominis muscle with maximum thickness of ~3mm – suggestive of abscess (Thick arrow); Caecum (thin arrow).

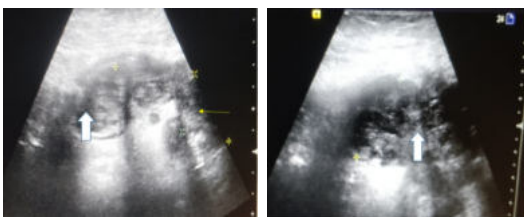


**Figure 2:** Colonoscopy images showing erythema and thick mucopus (arrow) in caecum And terminal ileum.

Colonoscopy guided biopsy showed mucosal biopsy from terminal ileum – Acute on chronic inflammation. Mucosal biopsy from caecum – Acute on chronic inflammation with focal cryptitis and crypt abscess.

Patient was suggested for interval appendectomy and continued on antibiotics. Patient did not come for follow up for 5 months. After that she presented to the general surgery with new complaints of loss of appetite and altered bowel habits. Planned for appendectomy. Considering her age, despite the initial inflammatory clinico-radiological-pathological picture, she was evaluated pre-operatively with tumor markers and ultrasonography.

Sonogram at this stage revealed a partly well-defined heteroechoic irregular collection measuring ~ 6.3 x 6.0 x 4.3 cm (volume ~ 81cc) noted in right iliac fossa abutting the caecum. The caecal wall showed mild wall thickening and surrounding inflammatory changes. On color Doppler, no obvious internal vascularity was noted. Appendix could not be visualized.



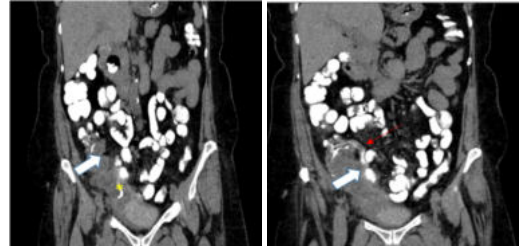
**Figure 3:** Ultrasound shows heteroechoic mass (Thick Arrow) in right iliac fossa and adjacent suspicious bowel wall Thickening (Thin Arrow).

Tumor markers performed showed mildly elevated serum CEA (11.7 ng/ml) and normal level Serum CA125 (16.9 U/ml).

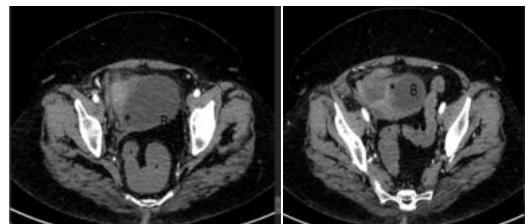
Contrast enhanced CT done 5 days after the ultrasound shows a ~6.5x4.6x4.5cm (CCxTRxAP) partly well-defined heterogeneously enhancing mass lesion with central non enhancing areas (likely necrosis) within was noted involving the right iliac fossa. This lesion was seen in continuation with caecum with associated heterogeneously enhancing bowel wall thickening. On post oral contrast, fistulous tract was noted between the mass lesion and distal ileal loop.

The appendix was not seen separately from the lesion. Anterolaterally, there was loss of fat plane between the lesion and right transversus abdominis muscle. Posterolaterally, loss of fat plane between the lesion and right psoas muscle.

The lesion was seen infiltrating into the right lateral wall of the urinary bladder with associated heterogeneously enhancing bladder wall thickening (maximum wall thickness ~16mm). Significant surrounding mesenteric fat stranding and mild free fluid noted around the lesion and along the right lateral aspect of the urinary bladder. Multiple subcentimetric heterogeneously enhancing lymph nodes were noted, the largest of them measures ~9mm in short axis diameter. Features were suggestive of malignant neoplastic etiology, however remote possibility of infective etiology (tubercular etiology) could not be ruled out. Histopathological evaluation was suggested.



**Figure 4:** CECT (post oral contrast); coronal view shows heterogeneous caecal mass (thick arrow), ileo-caecal junction (thin arrow) at higher level and an ileal fistula (\*) inferiorly.



**Figure 4:** CECT Abdomen & pelvis (Post-Contrast); Axial View shows Invasion (\*) of right lateral wall of urinary Bladder (B)

Colonoscopy guided biopsy shows edematous mucosa & prominent Peyer's patches in terminal ileum and features suspicious of malignancy in caecum. Cystoscopy guided biopsy showed features suggestive of polypoid cystitis with no evidence of any malignancy. GENE XPRT was also done to rule out the possibility of ileo-caecal tuberculosis which was also negative.

In view of cystoscopy findings trial of combined antibiotics and a follow up ultrasound was done after 15 days it showed an ill-defined heteroechoic lesion measuring ~8.5x5.5x4.2cm with minimal internal vascularity noted in right iliac fossa extending to right side of pelvis and showed suspicious infiltration into the right lateral wall of urinary bladder (maximum thickness ~12mm) and few subcentimetric sized loco regional lymph nodes were noted, the largest measuring ~8mm in MSAD.

**DIFFERENTIAL DIAGNOSIS:**

Initial NCCT, clinical and histopathological features mimicked appendicitis, which is one of the most common causes of inflammatory conditions in right iliac fossa. Right iliac fossa pain is a common acute general surgery presentation, and computer tomography (CT) is often used as an aid in determining the diagnosis. CT can play an important role in differentiating malignant and inflammatory causes. Pain is the most common symptomatic presentation of colorectal carcinoma followed by anaemia and weight loss.

According to a meta-analysis, sensitivity and specificity for diagnosing appendicitis was 94% sensitivity and 98% specificity. The use of contrast enhanced helical CT for accurate diagnosis of appendicitis was also demonstrated in a study by Rao et al. The CT features of typical case of appendicitis includes abnormal appendix, peri appendiceal inflammation, and changes in the cecal apex. The abnormal appendix is distended and non opacified, showing a diameter wider than 6 mm, wall thickening and enhancement after contrast infusion and appendicoliths. The peri appendiceal fat stranding, phlegmon, fluid, free air bubbles, abscess, and adenopathy are components of peri appendiceal inflammation. Cecal apex changes include focal cecal apex thickening, an arrowhead sign (collection of contrast material between each side of the cecal apical thickening), and a cecal bar (straight or slightly curved band of inflamed soft tissue that separates proximal calcified appendicolith from cecal lumen).

Another common inflammatory condition of right iliac fossa in our population is ileo-caecal tuberculosis. It occurs in three forms ulcerative, hypertrophic, and ulcero hypertrophic. Most common presentation is ulcerative type.

Intestinal tuberculosis (ITB) occurs in three forms, namely, with the ulcerative type being the most common. Ulcerative disease usually shows transverse ulcers, which are often superficial and heal by fibrosis". Hypertrophic form shows thickening and mass-like appearance of bowel associated with scarring and fibrosis. The most common bowel segment involved in ITB is ileum, yet it can involve any part of the bowel from duodenum to rectum. Imaging in the form of barium studies were the initial investigation for intestinal TB, but recently, CT scan gives better depiction of mural and extra intestinal involvement. Conventional CT scan or CT Enterography and MR Enterography findings can be divided into two groups; intestinal and extra intestinal abnormalities.

#### MANAGEMENT AND OUTCOME:

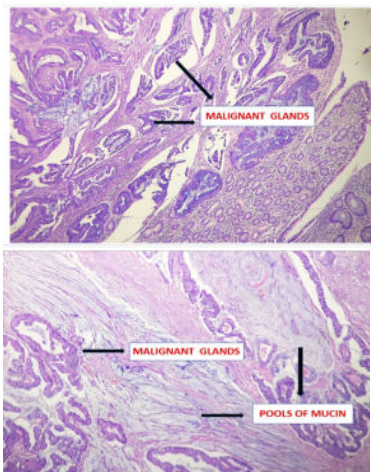
Right hemicolectomy with partial cystectomy were done revealed intraoperative findings of right iliac fossa mass involving caecum, ileum (20cm)

She had one fever spike on POD 1, which subsided with antipyretics and antibiotics. Post operatively, 2 units of packed cell, 2 units of FFP and 4 units of 20% human albumin was transfused. She was started on liquid diet on POD 3, which was changed to semi solid, soft and then normal diet as tolerated.

Suture site was examined and found to be healthy. Sub hepatic drain was removed on POD 6 and pelvic drain was removed on POD 8 after bedside ultrasound was done and intraabdominal collections were ruled out. Patient was discharged and referred for medical oncologist opinion.

#### HISTOPATHOLOGY:-

Histopathological examination of operated specimen revealed a well differentiated mucinous adenocarcinoma of the caecum (Grade I) directly extending into the urinary bladder and ileal wall with lymph vascular and perineural invasion. Regional lymph nodes (10 dissected) free of tumor.



**Figure 5:** Histopathology slides showing malignant glands and mucinous pools in the operative specimen suggestive of mucinous adenocarcinoma of caecum.

#### FINAL DIAGNOSIS

WELL DIFFERENTIATED MUCINOUS ADENOCARCINOMA OF CAECUM ADHERENT TO THE URINARY BLADDER AND ILEAL WALL (T4bN0).

#### DISCUSSION

Colorectal carcinoma accounts for 10% (8) of all cancers with an increased risk in age group of more than 45 to 50 years. A gender predilection is seen over males compared to females. Further studies on age distribution revealed that after 50 years of life there is increased risk of 0.5-2.0% for invasive carcinoma, 1%-1.6% for carcinoma in-situ; 7%-10% adenoma more than 1 cm and 25%-40% of adenoma of any size (9). The distribution of adenocarcinoma of the large intestine

is approximately 65% in the recto sigmoid area, 5% in the caecum and the rest are distributed in other areas of the colon(10). In that only 10% of colorectal carcinomas are mucinous type(11). Mucinous adenocarcinoma shows high propensity in first three decades of life.

CT and endoluminal ultrasound are better suited for the evaluation of tumor stage than manual examination, barium enema or fiberoptic techniques. CT visualize a discrete mass or focal wall thickening. The wall thickening may be circumferential, with or without extension beyond the bowel wall. Asymmetric mural thickening, with or without an irregular surface contour, is suggestive of a neoplastic process.

CT colonography is ideal tool for screening for colon carcinoma since most of the adenocarcinoma follows Adenoma – carcinoma sequence so that these cases can be prevented by detection of adenomatous polyps in early stage and thus survival rate can be increased. The ultimate goal of imaging is early detection and staging.

The computed tomography imaging can detect the exact depth of the extramural tumor invasion and circumferential resection margin. CT enterography by colonic distension is preferred for colorectal staging except at the region of rectum since the distance between mesorectal fat pad will be altered on colonic distension.

#### CONCLUSION

This case helps us realise the importance of contrast enhanced CT, as the initial plain CT imaging done elsewhere was misleading as an inflammatory process and further the overlying parietal wall abscess caused misdiagnosis. However newly added symptoms and patient's age alarmed the clinician for a systematic review with tumour markers and repeat CT imaging with oral & IV contrast. The unbiased and careful evaluation of repeat imaging revealed the malignancy.

This case emphasizes the importance of complete evaluation of suspected inflammatory lesion in elderly age (12) group with contrast enhanced CT.

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