



Raised CA19-9 in Endometriosis: A Case Report and Literature Review

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Objective: This case report discusses a patient with deep infiltrative endometriosis (DIE) associated with an isolated increase in CA19-9.

A review of the literature was conducted to explore the role of CA19-9 in diagnosing and prognosticating endometriosis, and to assess its potential in differentiating between gynaecological malignancies and endometriosis.

Presentation: Abdominopelvic pain and significantly elevated CA19-9 173 (0-37kunits/L) in a 36F with history of previously treated deep infiltrative endometriosis, referred to UGI 2ww pathway.

Past Medical History: deep infiltrative endometriosis with endometrioma, large benign spinal cord tumour requiring multiple surgeries

Past Surgical History: laparoscopic cystectomy of endometrioma 6 years previously

Medications: nil regular medications

Tumour markers at presentation (normal range/value):

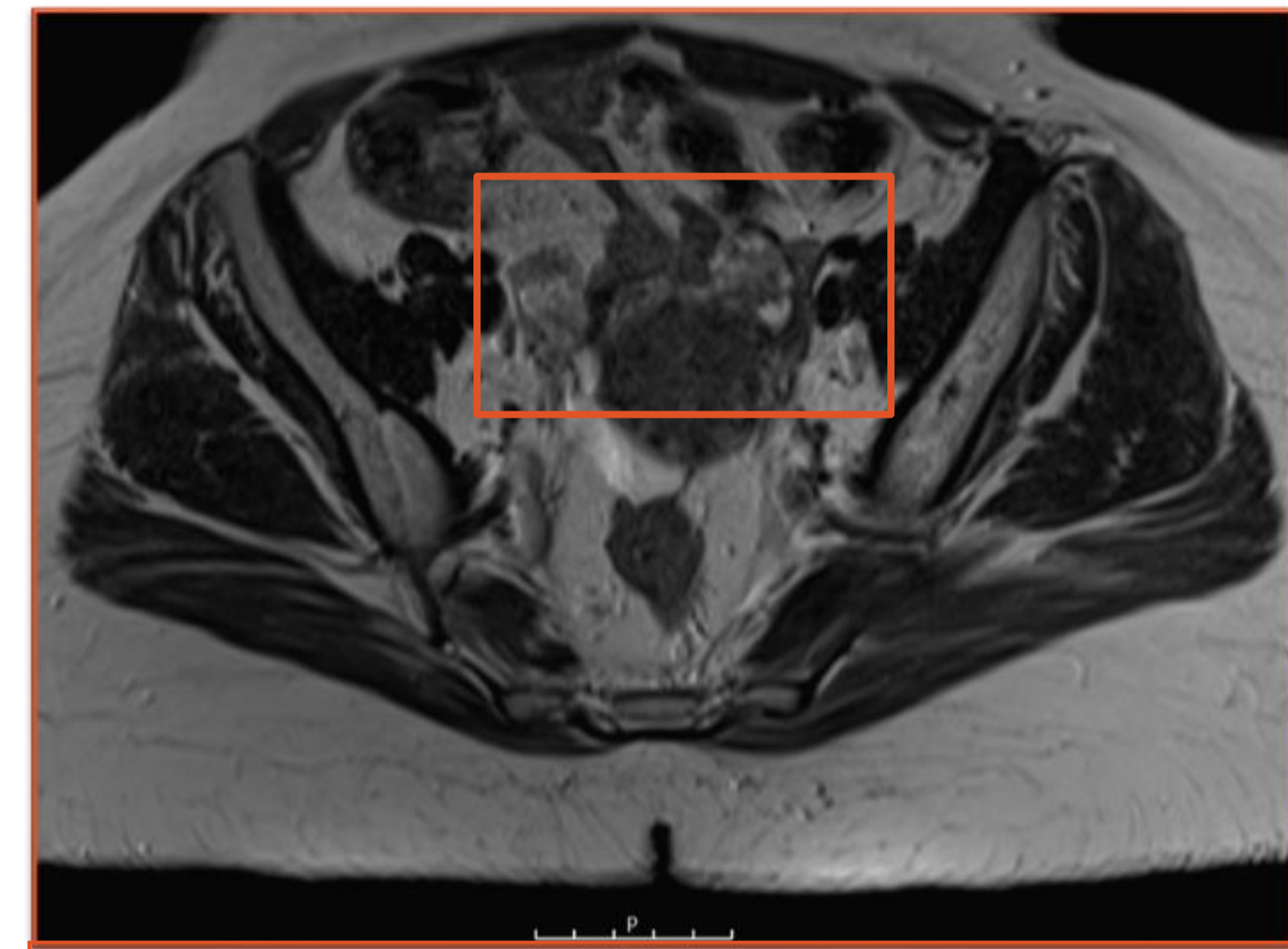
Ca 19-9: 173 (0-37kunits/L)

CEA level: <2 (0-5ug/L)

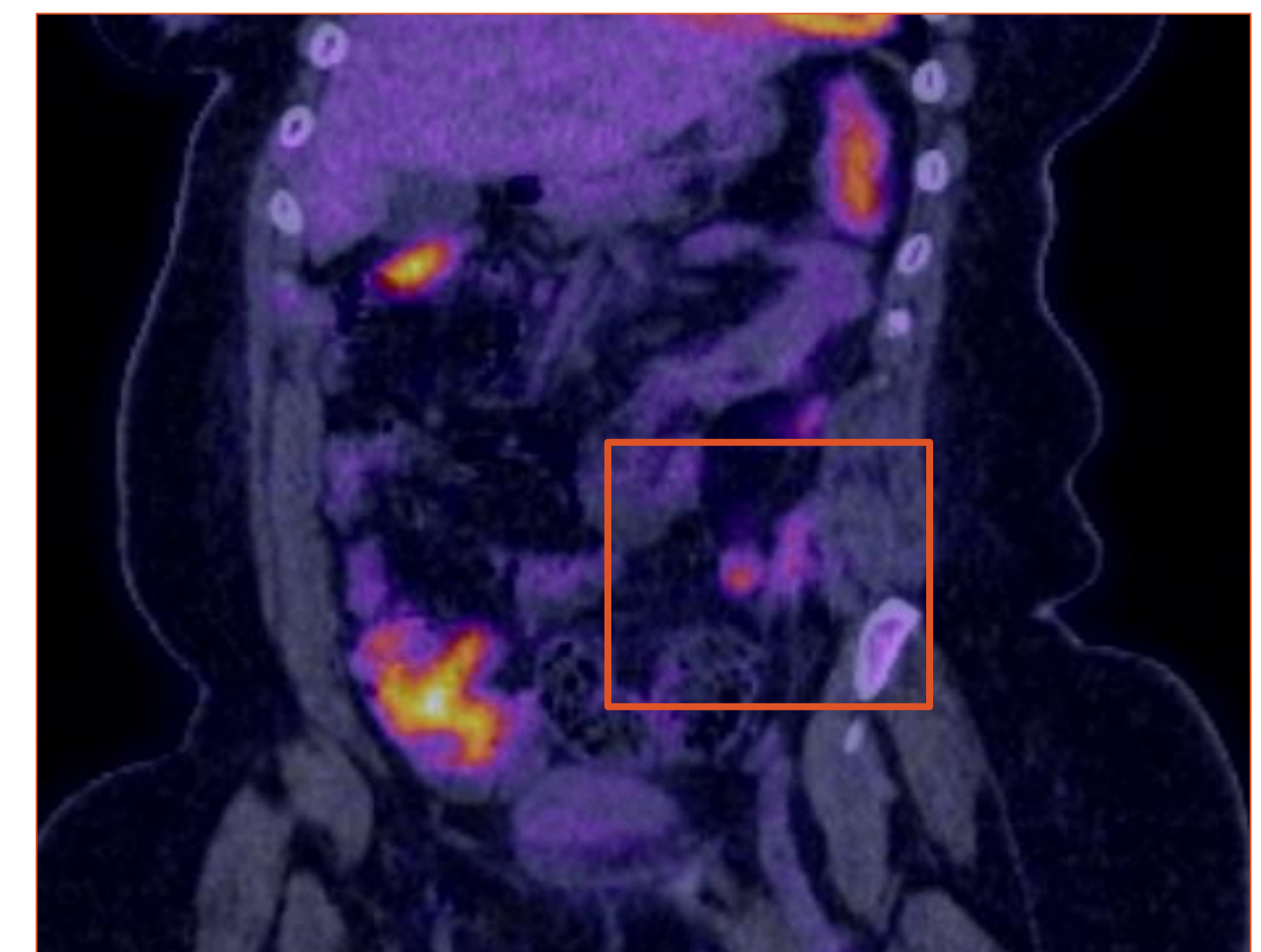
Inhibin B: 40 (<341ng/L)

AFP: <2 (0-13ug/L)

Ca 125: 30 (0-35kunits/L)



MRI Pelvis demonstrating tubo-ovarian complexes there appear tethered to the lateral walls of the uterus bilaterally (orange square)



PET CT demonstrating soft tissue thickening in the left lower abdomen abutting the descending colon has mild activity and is indeterminate (in orange square)

Investigations:

Due to the elevated CA19-9, the patient was initially referred by the GP to the Upper Gastroenterology team to rule out malignancy.

❖ CT Thorax abdomen pelvis with contrast demonstrated a left lower quadrat mass with focal thickening of the distal descending colon, suggestive of colorectal malignancy, but also included endometriosis or primary peritoneal malignancy as a differential

The case was then referred to the gynaecology and colorectal MDTs with the following investigations being performed:

❖ MRI Pelvis Gynae with contrast - demonstrated stranding in the left lower quadrant, differential include deep infiltrating endometriosis plaque versus peritoneal disease, and tissue surrounding the left ovary which required correlation with CA-125

❖ CT colonoscopy – demonstrated normal appearance of colon, and prominent right-sided retroperitoneal lymph nodes, the largest of which measured up to 9 mm

❖ FDG PET CT – demonstrated soft tissue thickening in the left lower abdomen abutting the descending colon has mild activity which was indeterminate. Histological assessment was suggested.

Due to diagnostic uncertainty for the above imaging regarding the mass's origin both the gynaecology and colorectal MDT recommend a biopsy. A CT-guided biopsy was performed which demonstrated fibrous tissue with focal endometriosis.

Management:

The patient subsequently underwent complex robotic surgery involving both gynaecology and colorectal teams to treat severe DIE involving the left abdominal wall

Procedure: Robotic assisted excision of endometriosis, bilateral ureterolysis, excision of DIE nodules from left para-rectal space and rectovaginal septum, DIE excision from bilateral utero-sacral ligaments, opening bilateral para-rectal spaces, partial left oophorectomy, adhesiolysis, rectal shave, ovarian suspension, resection of DIE nodule on the left lateral abdominal wall, appendectomy, flexible sigmoidoscopy.

Final diagnosis:

Deep infiltrative endometriosis with left endometriomas, L lateral abdominal wall and pararectal space involvement

Review of the literature

Carbohydrate antigen 19-9 (CA19-9) is widely recognised as a biomarker for hepatobiliary cancers, which initially led to concern about malignancy in this case. It can also be elevated in benign conditions like endometriosis and has recently been of interest when considering serum biomarkers for endometriosis.

❖ Nisenblat et al (2016) published a meta-analysis which reported CA-19.9 in endometriosis, with a cut-off value of > 37.0 IU/ml (3 studies, 330 women), sensitivity was 0.36 (95% CI 0.26 to 0.45) and specificity was 0.87 (95% CI 0.75 to 0.99), however did comment that no biomarker provided diagnostic value and that perhaps a combination of biomarkers would have better diagnostic use.

❖ Su et al (2024) demonstrated that raised biomarkers Ca 19-9, Ca-125 and LDH were all independent risk factors to guide in the differential diagnosis of ovarian endometriosis cysts versus ovarian cystadenoma and developed a validated nomogram to assist in diagnosis.

Interestingly, there are known cases where CA19-9 levels have been correlated with the severity of endometriosis, suggesting that it could help prioritize access to care in cases of long wait times for diagnosis and treatment.

❖ Shen et al (2015) demonstrated in a meta-analysis of tumour markers and endometriosis that Serum CA19-9 was significantly associated with stage III/IV disease but not with stage I/II disease. This suggests a potential for Ca19-9 levels to improve assessment of disease and guide on management

Conclusion:

- ❖ This case underscores the importance of considering endometriosis as a differential diagnosis in patients with elevated CA19-9 levels.
- ❖ Although CA19-9 is traditionally associated with pancreatic and hepatobiliary diseases, it can also be elevated in gynaecological conditions like endometriosis.
- ❖ After excluding malignancy, endometriosis should be considered, especially given its varied presentations and the delays in diagnosis and management
- ❖ Further studies are needed to evaluate the potential of CA19-9 as a diagnostic and prognostic marker, particularly for distinguishing benign from malignant gynaecological conditions.

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