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Peritoneal deciduosis mimicking peritoneal Carcinomatosis: A case report

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ABSTRACT

Ectopic decidual reaction (or deciduosis) can be rarely seen in the peritoneum and most of the cases in the literature are associated with pregnancy. It is more commonly found in the ovaries, uterus and cervix. Although its pathophysiology is not totally understood, it is accepted that peritoneal deciduosis develops as a result of the progesterone induced metaplasia of subserosal stromal cells during pregnancy. It is important to distinguish this entity from oncologic conditions, namely metastatic carcinoma and mesothelioma. We report an unusual case of a 40 year-old non pregnant patient that presented with imaging findings suggestive of peritoneal carcinomatosis.

1. Introduction

Deciduosis is defined as the presence of decidual tissue in an ectopic location. It appears to be related with a physiologic phenomenon of metaplasia induced by high levels of circulating progesterone during pregnancy, affecting sub-coelomic mesenchymal cells (Abramowicz et al., 2014). Deciduosis is more commonly located in the pelvis. It is a benign and self-limited condition, and can cause a constellation of symptoms, ranging from hemorrhage, abdominal pain and irritable bowel syndrome (Salehgargari et al., 2014). Other rare sites that can be affected include the appendix, omentum, diaphragm, liver, spleen, mimicking the peritoneal spread of malignant conditions like ovarian carcinoma and peritoneal mesothelioma (Baroni Cruz et al., 2014).

2. Case report

A 40-year-old, G0P0, non-pregnant woman, presented to an outside hospital with a recent history of diffuse hypogastric discomfort. She was treated with antibiotics for a presumptive urinary tract infection. As the complaints persisted, she underwent a computed tomography (CT) scan of the abdomen and pelvis and the findings were compatible with carcinomatosis, probably from ovarian origin as the left ovary was enlarged (Fig. A). She underwent an abdominal and pelvic magnetic resonance (MRI), and it confirmed carcinomatosis but with normal ovaries (Fig. B). CA 125 at this time was 11 U/ml. She presented to our institution for further management. After taking a careful medical history, the patient mentioned she had Rheumatoid Arthritis and was on Anti-TNF therapy. The patient denied previous history of endometriosis, active hormonal replacement therapy or oral contraceptive usage. Physical examination was unremarkable and the patient denied any other complaints. Repeat CA 125, CA 19.9, CEA were all within the normal range. After discussion in our Tumor Board, it was decided to proceed with a staging/diagnostic laparoscopy. 3 trocars were placed in the midline. Peritoneal carcinomatosis was observed, involving all abdominal quadrants (Fig. 1A). Multiple and confluent implants spreading throughout all the mesentery and small bowel serosa were also seen (Figs. 1B and 1C). Multiple biopsies were taken (including omentum and parietal peritoneum). A slightly enlarged right ovary was noted so salpingo-oophorectomy was performed (Fig. 1D). The appendix was also presenting with multiple implants, so appendectomy was performed (Fig. 1E). The Peritoneal Carcinomatosis Index (PCI) was 39/39, so primary debulking surgery was deemed not to be feasible.

Histologic examination revealed numerous sheets and nodular aggregates of large cells with abundant eosinophilic cytoplasm, round, vesicular, and eccentric nuclei, and inconspicuous nucleoli, lying in the soft tissue beneath the mesothelial lining. These infiltrates were seen in close association with mild chronic inflammation and vascular congestion. There was no evidence of necrosis or granuloma formation. Immunohistochemically, these foci of cells where positive for progesterone receptor, desmin, and vimentin supporting their deciduoid

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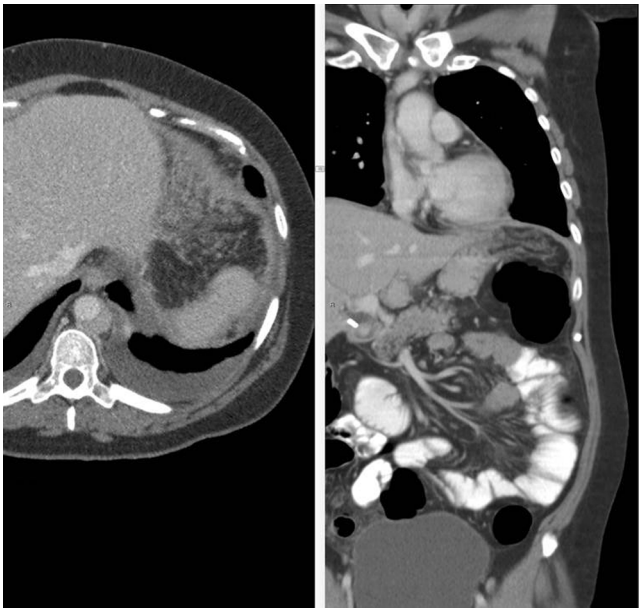

Fig. A. Abdominal CT (axial and coronal cuts) with IV contrast showing micronodular stranding of the peritoneal fat in the subphrenic space and linear thickening of both visceral and parietal folds of the peritoneum.

differentiation. There was an extensive infiltrate on the mesothelial surface which stained intensely and diffusely with CD68, attesting its histocytic nature. An additional panel of antibodies highlighted only the mesothelial layer [WT-1, CK5/6, CKAE1/AE3 and calretinin] thereby excluding the diagnosis of carcinoma and mesothelioma. Final diagnosis of peritoneal deciduosis with associated histiocytic peritonitis was made (Fig. 2). The right ovary sections demonstrated a large luteal body in an otherwise normal ovary.

Further investigation was performed and it excluded exogenous or endogenous hyperprogesteronism, or other potential sites of occult malignancy. All exams were negative. The patient is currently being followed (no additional treatment was offered to the patient after discussion in our Tumor Board). She remains asymptomatic and currently she is 36 months after her staging laparoscopy and the last transvaginal ultrasound was unremarkable.

3. Discussion

Ectopic decidua was first described in the literature in 1887 (Walker A, 1887). Most reports in the literature describe deciduosis in the pelvis and in pregnant woman. Peritoneal spread is rare, but it has been described in the small bowel, appendix, mesentery, colon, renal pelvis, spleen and even in pelvic lymph nodes. As previously said, its pathophysiology is not totally understood, but it is accepted that ectopic decidua develops as a result of a progesterone-mediated stimulus, causing metaplasia of subserosal stromal cells (Baroni Cruz et al., 2014). Bearing this in mind, if found in a non-pregnant woman, active search for endogenous and exogenous source of progesterone should be performed. Peritoneal deciduosis is usually an incidental finding, seen at the time of cesarean section (Adhikari and Shen, 2013). The surgeon usually describes multiple gray-white nodules or plaques resembling malignancy. Microscopically, decimal cells are found under the mesothelial cells, in the subcoelomic tissue or in adipocytes. Commonly these cells form small nests in the peritoneum although they can be found as widespread-florid deciduosis affecting the adypocites in some cases (Adhikari and Shen, 2013). The main differential diagnosis for our case was carcinomatosis of possible ovarian/fallopian tube/peritoneal origin. Despite normal CA 125, the laparoscopic findings showed extensive disease (PCI 39/39). Playing a central role, immunohistochemistry stains were positive for CD 68 and negative for SMA, CK5/6, CKAE1/

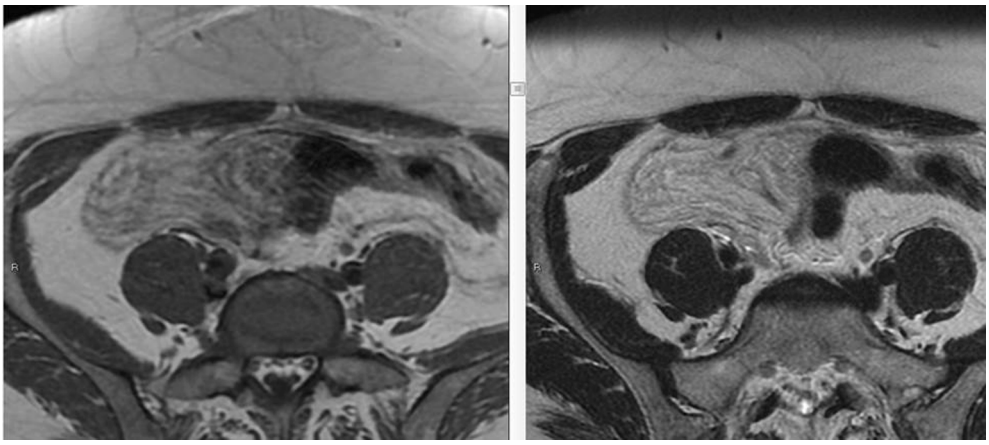

Fig. B. Pelvic MRI (axial T1 and T2) showing fat stranding and thickening of both peritoneal folds.

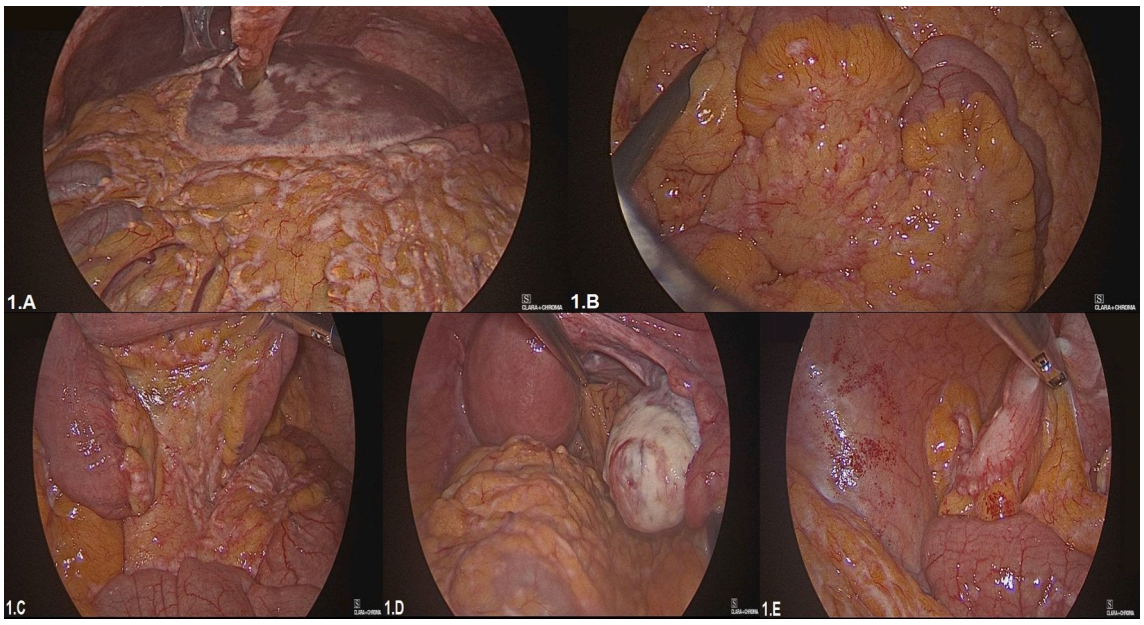

Fig. 1. (A) Right upper quadrant of the abdomen with extensive "disease"; (B) Confluent mesenteric involvement; (C) Small bowel serosa and mesentery with multiple implants; (D) Enlarged right ovary; (E) Appendix with multiple implants.

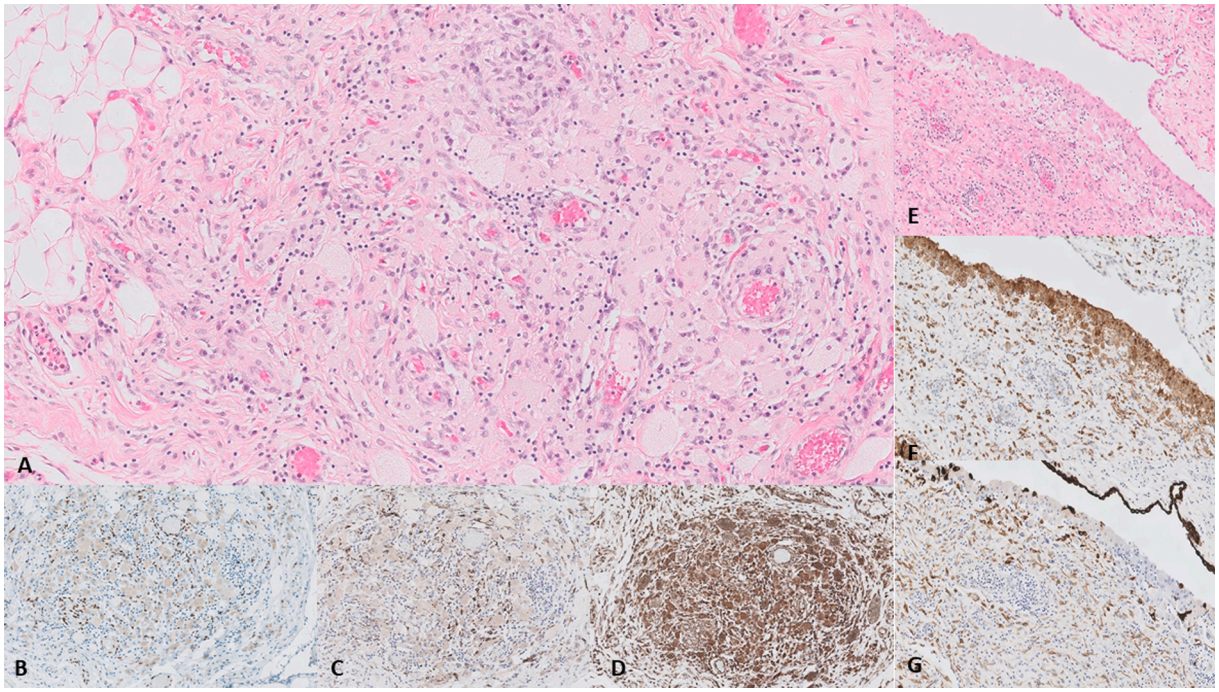

Fig. 2. (omentum, H&E) – A. Histologic section showing adipose tissue with nodular infiltrate by large cells with eosinophilic cytoplasm, small and eccentric nuclei, associated with mild chronic inflammation and vascular congestion. The large cells stain positive with progesterone receptor (B), desmin (C) and vimentin (D) were negative for CD68. **E-G: E**. Histologic section showing the mesothelial surface with diffuse infiltration by histiocytes, staining positive with CD68 (F) and negative for cytokeratine (G).

AE3, calretinin, WT1, GATA 3, CD 117, excluding the diagnosis of carcinoma and mesothelioma. Our case is rather interesting because it is one of the few reports in the literature of a non-pregnant patient showing such extension of ectopic decidua and thus mimicking extensive malignant carcinomatosis.

CRediT authorship contribution statement

João Casanova: Conceptualization, Writing - original draft, Supervision. **Jan Jurgiel:** Conceptualization, Writing - original draft. **Vanessa Henriques:** Writing - original draft, Investigation. **Henrique Nabais:** Writing - original draft. **Luís Vieira Pinto:** Writing - original draft. **Jose Filipe Cunha:** Conceptualization, Writing - original draft.

Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

the work reported in this paper.

References

Abramowicz, S., Kouteich, K., Grémain, J., Sabourin, J.-C., Marpeau, L., Sergent, F., 2014. Décidualisation ectopique géante du péritoine et de l'épiploon mimant une carcinose péritonéale. Gynécologie Obstétrique Fertil. 42, 182–184. https://doi.org/10.1016/j.gyobfe.2011.04.003.

Adhikari, L.J., Shen, R., 2013. Florid diffuse peritoneal deciduosis mimicking carcinomatosis in a primigravida patient: a case report and review of the literature. Int. J. Clin. Exp. Pathol. 6, 2615–2619.

Baroni Cruz, D., Dhamer, T., da Rocha, V.W., Dupont, R.F., 2014. Diffuse peritoneal deciduosis mimicking metastatic lesions. Case Rep. 2014, bcr2013202480–bcr2013202480. https://doi.org/10.1136/bcr-2013-202480.

Salehgargari, S., Sahebdel, B., Zare, A., Abolhassani, H., 2014. Ectopic decidual reaction mimicking irritable bowel syndrome: a case report. Acta Med. Iran. 52, 88–90.

Walker, A., 1887. Der bau der eihaeute bei graviditatis abdominalis. Virchows Arch. Path. Anat. 197, 72–99.