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Case Reports

Efficacy of MRI for detection of frozen pelvis

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Case Description:

A 26- year old female presented to us with severe pelvic pain. She was adviced follicular study and MRI pelvis. There was a large, multilobulated cyst in her pelvic region appearing hyperintense on both T1 and T2 fat sat sequences. There was also presence of multiple, hypointense peritoneal deposits seen on both T1 and T2 fat sat sequences. The findings concluded the diagnosis of frozen pelvis.

Discussion:

Frozen pelvis is a consequence of adhesive processes in which pelvic organs get distorted and adhered to each other. It commonly occurs as a result of endometriosis. Pelvic endometriosis is the presence of functional endometrium outside the uterus. It may be present as small microscopic structures to large cyst, known as endometriomas. It is mainly found in women of child-bearing age, mean age of diagnosis being 25-29 years. The patient may be asymptomatic or may have severe pelvic pain, adnexal mass or infertility. It is usually diagnosed in women with presenting complain of infertility more commonly than pelvic pain [1]. The endometrial tissue may be present at different sites like ovaries, gastrointestinal tract, urinary tract, chest and soft tissues, ovaries being the most common site. Several theories have been proposed for the development of endometriosis; (a) metastatic theory, (b) metaplastic theory and (c) induction theory. The most widely accepted theory amongst them is the metastatic theory, due to retrograde menstrual implantation, vascular and lymphatic spread and intra-operative implantation [2-4]. Magnetic resonance (MR) imaging has a greater specificity and is a problem-solving tool in differentiating endometriomas from other adnexal masses [5-7]. Endometriotic deposits appear as tiny nodular deposits over the peritoneal reflections and bowel wall serosa and appear hypointense on all sequences. [Figure 1a and figure 1b] Surrounding desmoplastic and fibrotic response may lead to puckering or tethering of pelvic structures. Endometriomas have relatively high signal intensity on T1 weighted images. Use of fat-suppression sequences improves lesion conspicuity. It is helpful in detection of small lesions and increases its specificity since the fat containing lesions like dermoid cysts are eliminated from the differentials [8-12]. The lesions appear hyperintense on both T1 and T2 sequences when it contains methemoglobin and concentrated proteins. [Figure 1c and figure 1d] The most specific feature of endometrioma is “shading”, loss of signal within the lesion which demonstrates the chronic nature of endometrioma.

Figure:

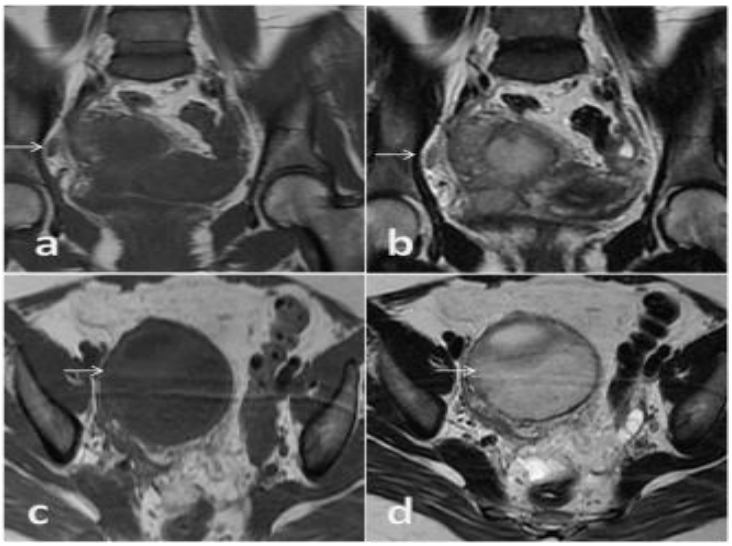

Figure 1a and figure 1b: Coronal sections from MRI pelvis, T1 and T2 fat sat sequences respectively, showing endometriotic deposits appearing as tiny nodular deposits over the peritoneal reflections as hypointense signals (white arrows). Figure 1c and figure1d: Axial sections from MRI pelvis, T1 and T2 fat sat sequences respectively, showing a large, multiloculated cyst appearing hyperintense on both sequences (white arrows).

Learning points/take home messages:

1. Frozen pelvis is a very painful condition resulting from adhesive processes like endometriosis.
2. MRI is the cornerstone for diagnosis of endometriosis.
3. Fat sat sequences are very useful in differentiating endometrioma from other adnexal masses.

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