

## Chronic ectopic pregnancy: MRI findings

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**Section:** Genital (female) imaging

**Area of Interest:** Genital / Reproductive system female

**Procedure:** Contrast agent-intravenous

**Procedure:** Computer Applications-3D

**Imaging Technique:** MR

**Special Focus:** Haemorrhage Case Type: Clinical Cases

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**Patient:** 29 years, female

### Clinical History:

A 29 year-old woman, gravida 3, para 2, abortus 1, was admitted with subacute abdominal pain. Her past history was unremarkable, except for one Cesarean section. She was currently menstruating with regular menses. She was taking oral contraceptives. She was afebrile and her abdomen was balloon with lower quadrant tenderness.

### Imaging Findings:

MRI showed an empty uterus with normal ovaries. Axial T2-weighted MR image shows masses of high and medium signal intensity and axial T1-weighted MR image shows the same masses with medium signal intensity suggesting an encysted hematocele. Axial T1-weighted MR image shows also a cystic GS with a yolk-like structure surrounded by a thick wall. Post-contrast axial T1-weighted MR image shows a sausage like structure with an enhancing wall corresponding to the right fallopian tube that contains the GS surrounded by the trophoblast.

### Discussion:

An ectopic pregnancy (EP) is a clinical condition in which a fertilised ovum implants in an area other than the uterine cavity, commonly in the fallopian tube. Chronic EP is considered as a separate clinical entity in which a blood collection is organized. The presence of blood, trophoblastic tissue and disrupted tubal tissue in the peritoneal cavity cause an inflammatory response and it results in adhesion and haematocoele formation. The clinical presentation of chronic EP is generally mild (spotting, abdominal cramps, nausea, vomiting or rectal fullness) [1]. A complexed adnexal mass without an intra-uterine pregnancy on transvaginal (TV) sonography accompanied by a positive serum  $\beta$ -hCG assay will aid in the diagnosis of chronic ectopic pregnancy. However, it should not be overlooked that a number of patients had a negative serum assay. Turan C, et al [2] evaluated the transvaginal sonographic findings of chronic EP cases. An extra-uterine mass was present in all these cases. The ratio of cystic/solid components varied considerably from case to case. The variation in the echo patterns represented haematocoeles of varying amounts of old blood, fresh clots and adhesion. The sonographic pattern of chronic EP was similar to the pelvic inflammatory disease, endometrioma, leiomyoma, complex ovarian cyst and ovarian neoplasm. Ultrasonography is very helpful for screening of haematocoele, but presents some difficulties to its final diagnosis. MR study is proposed to provide additional information for a limited number of patients who need precise diagnosis. The main strength of MRI is its ability to determine the exact organ of origin when this hematocele is not clearly determined by TV sonography. This situation requires access to MRI in emergencies in such clinical settings. In our case, MRI has been shown to have an overall accuracy for characterising the extra-uterine complex mass and showing the

abnormal gestational sac (GS).MRI is capable not only of identifying blood but also of determining the age of blood products as acute (intermediate signal intensity on T1 and marked low signal intensity on T2), subacute (peripheral high signal intensity with a distinct central area of low intensity signal on T1 and T2) or chronic (entirely high signal intensity on T1 and T2). GS-like structure typically appears as a cystic sac-like structure containing a yolk sac realising the tubal ring sign. Post-contrast images may be helpful since GS-like structure is usually associated with linear enhancement of the surrounding tubal wall [3, 4].

**Differential Diagnosis List:** Chronic tubal ectopic pregnancy, Pelvic inflammatory disease, Complex ovarian cyst, Ovarian neoplasm

**Final Diagnosis:** Chronic tubal ectopic pregnancy

#### **References:**

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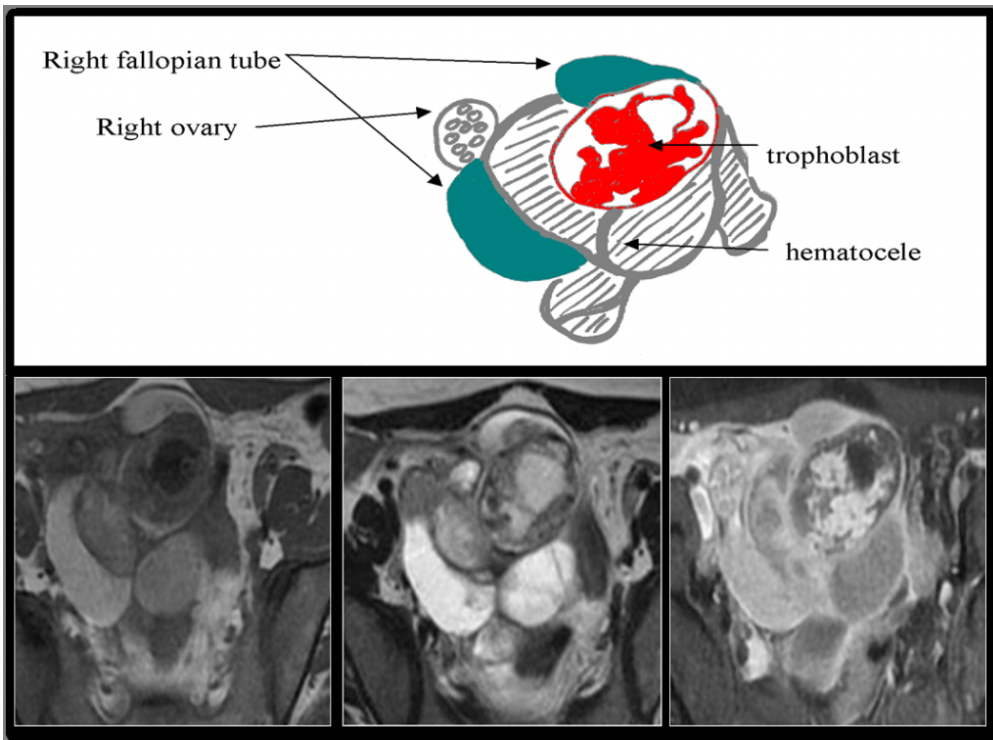
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**Figure 1**

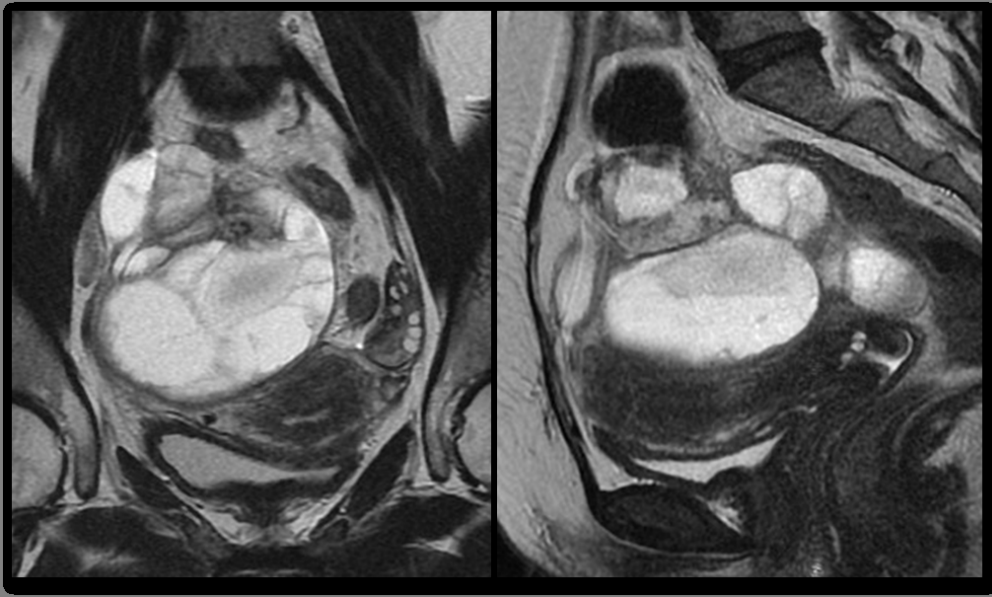
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**Description:** MR images showing the encysted haematocoele, the haematosalpinx and the gestational sac surrounded by the trophoblast. **Origin:** Mezghani S, Department of Radiology, Ben Arous Hospital, Tunisia

**Figure 2**

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**Description:** Coronal and sagittal T2-weighted MR images showing an empty uterus associated with a complex adnexal mass of high and medium signal intensity. **Origin:** Mezghani S, Department of Radiology, Ben Arous Hospital, Tunisia.