

Complete Hydatidiform Mole with Theca Lutein Cysts: Classic USG and MR Imaging Spectrum

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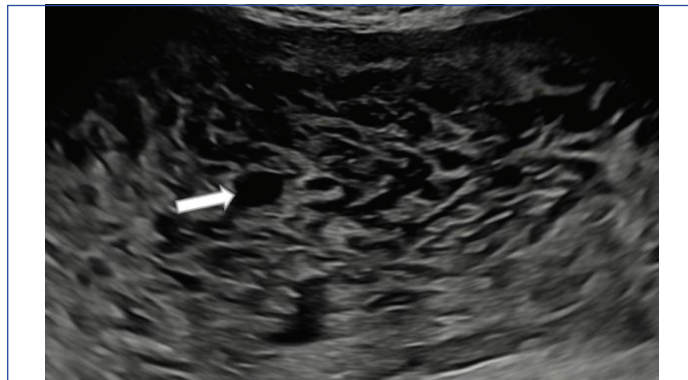
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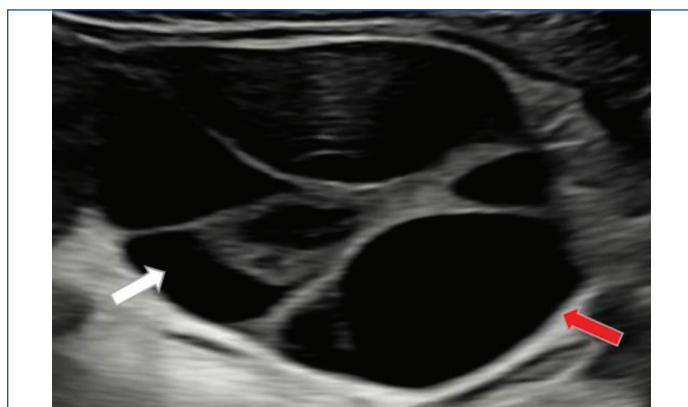
Dear Editor,

A 26-year-old married G2 P2 woman presented with four months of amenorrhoea, abdominal pain, and vaginal bleeding, along with a history of passing grape-like lesions during vaginal bleeding. On examination, the uterus was approximately 14-16 weeks gestation. Transabdominal pelvic ultrasound revealed that the uterus measured 18.5×13.6×6.4 cm, appeared enlarged, bulky in size, shape, and echo pattern with multiple cystic lesions showing a snowstorm appearance [Table/Fig-1]. No foetal parts were identified within it. Bilateral ovaries appeared enlarged with variable sizes of multiloculated cysts within, known as theca lutein cysts [Table/Fig-2]. Elevated levels of beta-Human Chorionic Gonadotropin (β -HCG) around 105000 mIU/mL were present. Consequently, a Magnetic Resonance Imaging (MRI) of the pelvis was performed to detect any myometrial invasion and to confirm the ultrasound findings. No evidence of myometrial invasion was noted on the MRI. The mass showed high signal intensity relative to the myometrium and demonstrated low intensity on the T1-

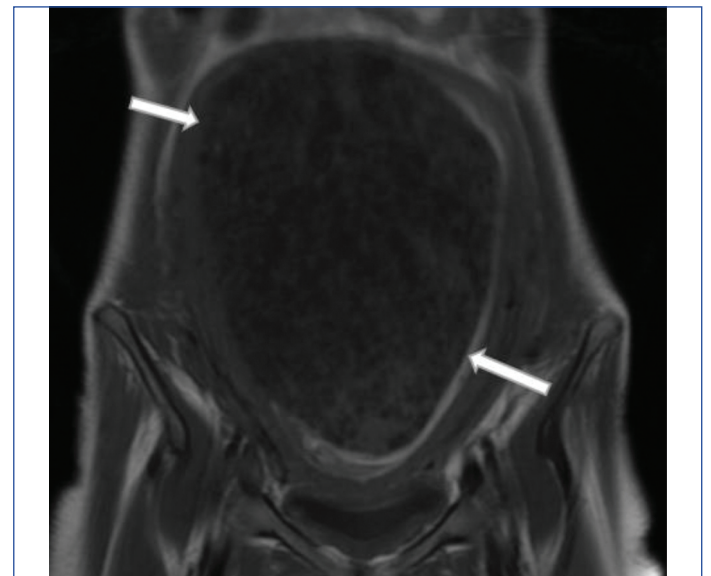
weighted image [Table/Fig-3]. It showed high intensity on the T2-weighted image with a large number of internal cysts also visible [Table/Fig-4]. Additionally, bilateral ovarian enlargement with variable sized multiloculated cysts known as theca lutein cysts was observed [Table/Fig-5]. Surgery was performed, confirming the diagnosis of a complete hydatidiform mole.



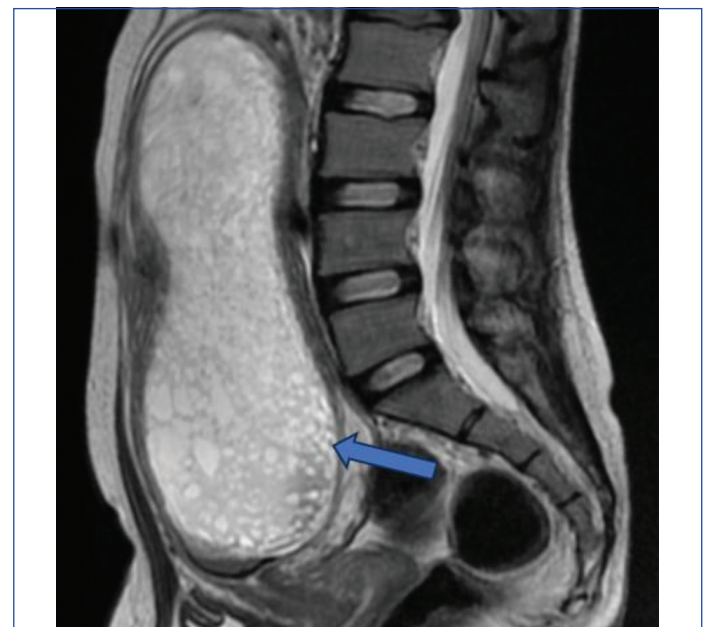
[Table/Fig-1]: Transabdominal ultrasound image shows an enlarged uterus containing a complex echogenic intrauterine mass containing several small cystic areas (white arrow). (Snowstorm appearance).



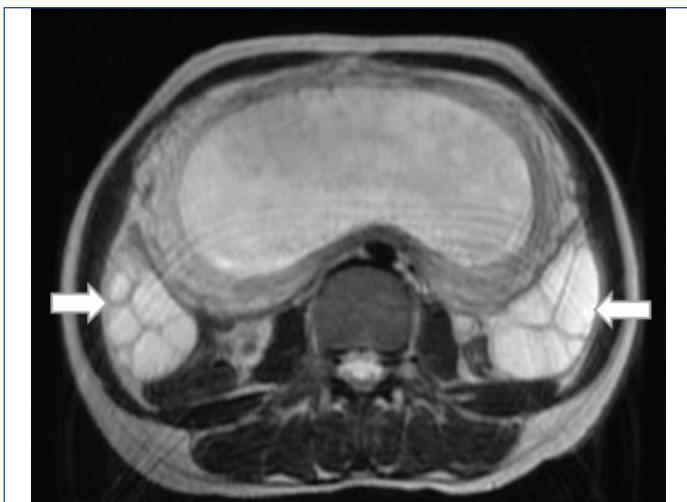
[Table/Fig-2]: Transabdominal ultrasound image shows an enlarged ovary (red arrow) that contains multiple large variable sizes multiloculated cysts (white arrow) within it (theca lutein cysts).



[Table/Fig-3]: Coronal T1W MRI image shows a low intensity mass (white arrows) filling the uterine cavity.



[Table/Fig-4]: Sagittal T2-weighted MRI image shows numerous high signal intensity masses with small internal cysts (blue arrow) within the uterine mass.



[Table/Fig-5]: Axial T2 weighted MRI image shows variable sizes multiloculated cysts (white arrows) within bilateral ovaries (theca lutein cysts).

Gestational trophoblastic disease is closely associated with pregnancy-related pathologies. The spectrum of the disease includes hydatidiform mole, invasive mole, metastatic mole, choriocarcinoma, placental site trophoblastic tumour, and epithelioid trophoblastic tumour, all of which have a close association with the proliferation of trophoblastic tissue [1]. Molar pregnancies commonly occur in women of reproductive age. There are two types of hydatidiform mole: partial and complete. In partial hydatidiform mole, fertilisation of the ovum can occur by two sperms or by one sperm. The genotypes can be 69, XXX, 69XXY, or 69, XYY [2].

Complete hydatidiform mole forms when an empty ovum is fertilised by sperm, resulting in the genotypes of 46, XX [2,3]. The incidence of complete hydatidiform mole is around 1 in 1500-2000 pregnancies. In this disease, patients generally present with irregular vaginal bleeding and amenorrhoea. Multiple hydropic chorionic villi

containing fluid-filled vesicles are seen, which mimics a grape-like appearance [3].

The radiologist plays a key role in diagnosing gestational trophoblastic diseases. The protocol includes a combination of USG and MRI, along with beta-HCG values for correlation. On transabdominal pelvic ultrasound, the uterus appears enlarged, bulky in size, shape, and echo pattern, with multiple cystic lesions within it. It occupies the whole uterine cavity, showing a snowstorm appearance with no foetal parts within. Bilateral ovaries will appear bulky with variably sized multiloculated cysts noted within, known as theca lutein cysts. Raised levels of β -HCG, more than 100,000 mIU/mL, can be present, which is a highly sensitive tumour marker with acceptable specificity for comparison with imaging findings. The differential diagnosis of ectopic pregnancy in present case can be easily ruled out, considering the absence of classic USG findings and the very high beta-HCG value [4].

Consequently, an MRI of the pelvis needs to be done to detect any myometrial invasion, as well as to confirm the USG findings. In cases of gestational trophoblastic neoplasms, MRI is an essential imaging modality as an adjunct to USG and beta-HCG evaluation. It serves two purposes: to describe the extent of invasion of the mole and to search for distant metastases, which can commonly occur in the lungs, liver, and vagina.

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