

# HYPERREACTIO LUTEINALIS: A RARE ASSOCIATION

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## ABSTRACT

Hyperreactio luteinalis is rare condition in which there is marked cystic enlargement of ovaries due to theca lutein cysts and is mostly associated with multiple pregnancies, recurrent abortions, hydatidiform mole and choriocarcinoma. It is commonly related to elevated level of human beta-HCG. Radiological imaging is essential in diagnosis of hyperreactio luteinalis since its misinterpretation at laprotomy and erroneous histological diagnosis can result in unnecessary surgery. We present a case report of hyperreactio luteinalis in 35 years old gravida 4, para 0, referred to our department for contrast enhanced CT (CECT) scan of abdomen and pelvis by gynaecological unit. This case is presented for its rarity along with its clinical and radiological findings as well as literature review. **Keywords:** Hyperreactio luteinalis, Choriocarcinoma, Hydatidiform mole.

## Introduction

Hyperreactio luteinalis is rare condition associated with increased beta-HCG level disorders such as hydatidiform mole, multiple pregnancies and choriocarcinoma, occurring in about 10% of cases of choriocarcinoma.<sup>1,2</sup> It is seen as massive cystic enlargement of ovaries with multiple theca lutein cysts.<sup>3</sup> Hyperreactio luteinalis presents with increased beta-HCG level, ascites, pleural effusion, severe imbalance of angiogenic factors, abdominal pain, abnormal liver function, respiratory difficulties and hirsutism.<sup>2,4,5</sup> It can also be seen as an incidental finding in patients with cesarean section and can lead to unnecessary ovarian resection due to its anaplastic appearance.<sup>6</sup> Typical multiloculated ovaries are seen on all imaging modalities such as ultrasound, CT and MRI with multiple cysts of about 1-3 cm.<sup>7</sup> We are reporting a case of hyperreactio luteinalis in multigravida patient with metastasized choriocarcinoma on CECT presented with per vaginal bleed, abdominal pain, vomiting, weight loss, exertional dyspnoea and fatigue. It highlights the importance of radiological imaging

to diagnose hyperreactio luteinalis with choriocarcinoma in applicable clinical scenario.

## Case Report

A 35-year gravida 4, para 0, presented to radiology department, Civil Hospital Karachi for CECT scan of abdomen and pelvis, referred from gynaecological unit. She had complaint of per vaginal bleed for five months which was heavy, bright red in color with clots without pus or mucous. Patient also complained of exertional dyspnoea, fatigue, abdominal pain, excessive vomiting, heat intolerance and weight loss. She had history of spontaneous abortion five and half months back which was done by midwife. On clinical examination patient had pallor, distended abdomen and frank vaginal bleeding. Her routine laboratory investigations were within normal limit except decreased hemoglobin level. Patient was also screened for beta-HCG which was markedly increased 63,940 IU. Ultrasound pelvis was done which showed enlarged

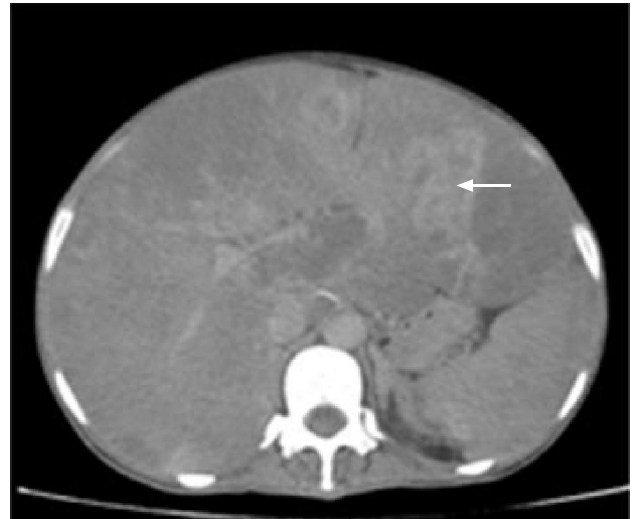
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uterus with heterogeneous mass filling almost whole of uterine cavity, with cystic and solid areas invading myometrium. Both ovaries were enlarged in size with multiple cysts of almost equal size. Then she underwent for CECT scan of chest, abdomen and pelvis that showed enlarged uterus with heterogeneously enhancing uterine mass invading myometrium, enlarged multicystic both ovaries, and multiple metastatic deposits in peritoneum, liver and lungs (Fig. 1 and 2). On the basis of clinical, laboratory and radiological findings, diagnosis of metastasized choriocarcinoma with hyperreactio luteinalis was confirmed.



**Figure 1:** Axial images of CECT pelvis show bilateral enlarged multicystic ovaries (right arrows) and heterogeneously enhancing uterine mass (up arrow).



**Figure 2:** Axial and coronal images of CECT abdomen and pelvis show enlarged uterus with heterogeneously enhancing mass (right arrow) and enhancing hepatic metastases (left arrow).

## Discussion

Hyperreactio luteinalis is rare condition characterized by bilateral multiple benign functional ovarian cysts with hypertrophy of theca interna due to abnormal response of follicles to circulating beta-HCG levels which maybe normal or high.<sup>8</sup> Patient usually present with sign and symptoms of associated disease that could be abdominal pain, abdominal distension, pleural effusion, ascites, pelvic pain, torsion, haemorrhage,

hirsutism, respiratory difficulty, abnormal liver function test.<sup>1,2</sup> It is commonly seen in patients with hydatidiform mole and choriocarcinoma due to abnormal ovarian response to beta-HCG and pituitary gonadotropins,<sup>9</sup> as seen in our patient as a consequence of choriocarcinoma. Hyperreactio luteinalis shows bilateral enlarged ovaries with symmetrical uniform size of cysts approximately 1-3 cm in diameter and multiloculated appearance on all imaging modalities.<sup>4,7</sup> Both ovaries are enlarged and multicystic on ultrasound and CECT as seen in our patient's CT. While MRI shows enlarged multicystic ovaries with different signal intensity on T1WI and T2WI due to cysts and hemorrhage, and edematous vascularized parenchymal center as T1WI and T2WI isointensities.<sup>1,10</sup> sometimes it can also be seen as an incidental finding in patients with cesarean section and can lead to unnecessary ovarian resection due to its anaplastic appearance so proper diagnosis is mandatory for management.<sup>6</sup> Hyperreactio luteinalis is treated both conservatively and surgically, the surgical treatment is required to remove the infarcted tissue due to torsion and haemorrhage.<sup>2</sup>

## Conclusion

Hyperreactio luteinalis is a rare condition with marked cystic enlargement of ovaries associated with choriocarcinoma, hydatidiform mole, multiple pregnancies, abortion and even after normal pregnancy. Radiological imaging is essential in diagnosis and management of condition. This case was reported due to its rarity and to emphasize the role of radiological imaging.

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