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RESEARCH ARTICLE

RIGHT OVARIAN VEIN THROMBOSIS (OVT). A RARE PRESENTATION OF ABDOMINAL PAIN

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Abstract

Ovarian vein thrombosis (OVT) is a rare condition occurring in 1/600 to 1/2000 pregnancies mainly in the postpartum setting[1,2]. However, it is a potentially life-threatening condition and can occur in other circumstances, such as inflammatory diseases of the pelvis, gynecological tumors, after pelvic surgery, during sepsis, hypercoagulable state, or even sometimes without an underlying cause [2]. It is usually manifested by nonspecific abdominal pain, with or without fever, and must be recognized because of its potentially serious complications (pulmonary embolism) [2,5]. Currently, the diagnosis is done earlier thanks to imaging techniques making the prognosis better[3,4].

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Introduction:-

41 years old Female presented three times to Emergency department in Hatta Hospital with complains of right lower abdominal pain, nausea and vomiting for around 1 weeks. An overview of systems, she denied fever, chills, diarrhea or constipation. Past medical history was significant for, grand multipara (P9+0), gestational diabetes, pregnancy induced hypertension in last pregnancy which was 2 years back and iron deficiency anemia with low ferritin and Hemoglobin of 6.7 g/dl on presentation. She was not on any chronic medications and all her pregnancies were delivered vaginally.

Patient also denied recent surgery, history of venous thrombosis, sedentary lifestyle, recent infection, or pregnancy.

CT scan of the abdomen and pelvis with intravenous (IV) contrast revealed features of right ovarian vein thrombosis extending to the IVC (figure 1 & 2) and Minimal pelvic free fluid. A complementary ultrasound Doppler showed no evidence of ovarian torsion.

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She was admitted under medical team. On admission, patient was afebrile and hemodynamically stable. Vascular team, surgical and Gynecology teams advised for conservative management. Further investigation for inherited and acquired thrombophilia, protein C and protein S activity, systemic lupus erythematosus, and antiphospholipid syndrome was obtained and later proved unremarkable. Her COVID 19 swab result was negative and no history of receiving Anti COVID 19 vaccination. Therefore, the presumptive diagnosis of OVT was made, anticoagulation treatment was initiated with low-molecular-weight heparin and 2 units of packed red blood cells was given as her Hemoglobin rose to 9.9 g/dl. Patient's symptoms completely resolved in the next 24 hours and she was discharged home on direct oral anticoagulation therapy with rivaroxaban for 6 months. At her 2-month follow-up appointment and CT of abdomen and pelvis with IV contrast will be scheduled



Right ovarian vein thrombus with Inferior Vena Cava Floating thrombus (Figures 1 & 2)

Discussion:-

The incidence of OVT ranges from 0.05% to 0.18% in normal vaginal deliveries but it goes up to 2% with cesarean deliveries and twin pregnancies [7, 9], with 90% of the cases involving right-sided ovarian vein [7]. OVT is a rare yet potentially fatal condition with a 52% mortality rate if left untreated [6, 8]. It can extend to inferior vena cava or renal veins due to anatomical proximity. According to one report, the incidence of pulmonary embolism arising from OVT is 33%, with ~4% mortality rate.

In up to 80-90% [5] of the times OVT develops in the right side [4], which has been attributed to various factors:

1. Pregnancy's physiologic dextrorotation of the uterus, causing compression of the right Ovary; [3], [13]
2. The acute angle between the right OV and the inferior vena cava (as opposed to the right angle between the left OV and the homolateral renal vein), making the right OV more prone to compression; [11]
3. - Post-partum anterograde blood flow in the right Ovary [3], whereas in the left side it is retrograde; [3], [11] the latter prevents stasis and ascending infection [8].
4. - Longer OV and with more incompetent valves on the right side, inducing blood stasis. [13], [7] Complications due to OVT, which are more frequent in the post-partum scenario [11], include:
5. - Thrombus progression into the renal veins or inferior vena cava [11], [5].

6. - Pulmonary embolism (with a wide reported incidence, from close to 0% to 13%-33% [3],[12]; associated mortality is approximately 4%-5% [3],[10].
7. - Acute ureteral obstruction (right ovarian vein crosses the ureter anteriorly at the level of L4) [12].
8. - Ovarian infarction [13]
9. - Sepsis [12]

OVT recognition by CT scan requires intravenous contrast administration, after which a filling defect in the affected OV is identified; the vein can also appear dilated and with an enhanced wall [15]. The classic CT finding is a dilated tubular retroperitoneal structure (corresponding to the OV), with wall enhancement, but contrast negative centrally in the thrombus zone, where it appears hypodense [14]. When seeing this image, CT-scan accuracy for the diagnosis of OVT is high, with a 77.8% - 100% sensibility and a 62.5 - 100% specificity [11, 5]

OVT spontaneous resolution is a possibility; however, as it is a life-threatening condition, anticoagulation is usually recommended. First-line treatment is pharmacological, consisting of anticoagulants and intravenous broad-spectrum antibiotics. [12],[13] Optimal duration/length of therapy and systemic use of antibiotics are not consensual. [11],[15] Some authors advocate a brief course of anticoagulants, reporting thrombus dissolution after 7-14 days; others argue that thrombosis persists with short course treatments, recommending continuing anticoagulants for 3-6 months, until confirmation of resolution by Imaging. [11] If medical treatment is unsuccessful, severe or contraindicated complications arise, other therapeutic options may be considered, including inferior vena cava filter, hysterectomy, thrombectomy, direct infusion of thrombolytic agents through venography or ligation of the inferior vena cava or ovarian vein. [12]

In our case, the patient was initially started on therapeutic LMWH and later switched to DOAC (Rivaroxaban 15 mg BD for 21 days followed by 20 mg OD 6 months) with follow up in Internal medicine and Gynecology outpatient clinic.

Conclusion:-

OVT is a unique entity usually associated with the peripartum and postpartum period. Idiopathic OVT is a very rare condition that can lead to potentially fatal complications, and hence early diagnosis is very important. Hypercoagulability workup should be performed if no obvious risk factor has been identified, and anticoagulation remains the mainstay of the treatment along with antibiotics if needed. The choice of anticoagulation depends on individual risk factors, childbearing age status, and the underlying cause of OVT.

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