AnnalsofClinicalandMedical Case Reports

CaseReport ISSN2639-8109Ψolume9

PregnancyLuteoma:ACaseReport

LiaskosA[1*],KalogeropoulosS[2],BravouV[3]andAdonakisG[4]

[1]ResidentDoctorinObstetricsandGynecologyDepartment,UniversityHospitalofPatras,Greece

[2]ConsultantDoctorinObstetricsandGynecologyDepartment,UniversityHospitalofPatras,Greece

[3]Pathologist,AssociateProfessorinDepartmentofAnatomy-Histology-Embryology,SchoolofMedicine,UniversityofPatras, Greece

[4]ProfessorinObstetricsandGynecologyDepartment,SchoolofMedicine,UniversityofPatras,Greece

[*]Correspondingauthor:

AntoniosLiaskos,
Resident Doctor in Obstetrics and Gynecology Department,UniversityHospitalofPatras,Greece, E-mail: antony.liaskos@gmail.com

Received: 01 May 2022
Accepted: 16 May 2022
Published:21May2022
JShort Name:ACMCR

Citation:

LiaskosA,PregnancyLuteoma:ACaseReport. Ann Clin Med Case Rep. 2022; V9(3): 1-3

Keywords:

Pregnancy; Luteoma; Caesarean section

1. Abstract

Pregnancy luteoma is a non-neoplastic lesion of the ovary related to hormonal effects of pregnancy that is usually discovered incidentally at the time of a caesarean section or during postpartum tubal ligation. We herein report a case of a 33year-old full-term pregnant female who presented with abdominal pain and a right-sided ovarian mass.

2. Introduction

Luteoma of pregnancy is a rare ovarian lesion, first described by Sternbergin1963[1]andthoughttoarisefromexcessiveresponse of ovarian stromal cells to pregnancy hormones, especially be-ta-human chorionic gonadotropin (β-hCG) [2]. Pregnancy luteomarepresentsadiagnosticandtherapeuticchallengeinthatitcan mimic a malignant ovarian neoplasm [3]. As pregnancy luteoma usuallyregressspontaneouslypostpartum[1]ahighclinicalsuspicion is mandatory for appropriate therapeutic management.

3. Case Report

The authors describe a case of a pregnancy luteoma in a 33-year old full – term pregnant woman. A 31-year-old woman (G1P0) was admitted to the Obstetrics and Gynecology Department intheUniversityHospitalofPatraswithabdominalpain.Shehada medicalhistoryofpolycysticovariansyndrome(PCOS),diabetes mellitustypeI,highbloodpressureandanincreasedbodymassindex(BMI=37,5).Shedidn'thaveanantenatalcareonaregularbasis.Anabdominalultrasoundrevealedaright-sidedovarianmass. Nopreviousclinicalinformationregardingthisadnexalmasswas mentioned,sothatacaesareansectionwasperformed.Duringthe caesarean section a palpable mass of the right ovary was found; an ovarian mass excision was carried out and the specimen was submittedtohistopathologicanalysis.Amalenewbornwasdeliv- ered with a birth weight of 2960gr, which was not affected cause of his sex.

Macroscopic examination showed a well circumscribed 3.4cmx-2cmx2cmmassthatoncutsectionwassolid,soft,fleshyandgrey to grey brown. Hematoxylin and eosin stained paraffin sections revealed a multinodular solid mass composed of round to polygonalcellsarrangedinsheets,islandsandcordswithroundtooval vesicular nucleus with variably prominent nucleoli and abundant eosinophilic granular cytoplasm. Nodules were separated by thin fibrousseptaandtherewerenumerouscapillaries.Upto7mitotic figures per 10 HPF were found. Rare lipid containing cells were identified while nuclear atypia was mild and there was no necrosis, nuclear grooves or Reinke crystals. On immunohistochemistry cells expressed calretinin, inhibin, vimentin, Melan A while other markers (HMB45, S-100 etc) were negative. Reticulin stain showedfiberssurroundinggroupsofcells.Basedontheabovehistopathologic findings and the clinical history of pregnancy other sex-cord stromal tumors of the ovary, mainly Leydig cell tumor, steroid cell tumor NOS (especially the lipid poor variant) and luteinizedgranulomacelltumorwereexcludedandafinaldiagnosis of pregnancy luteoma was made.

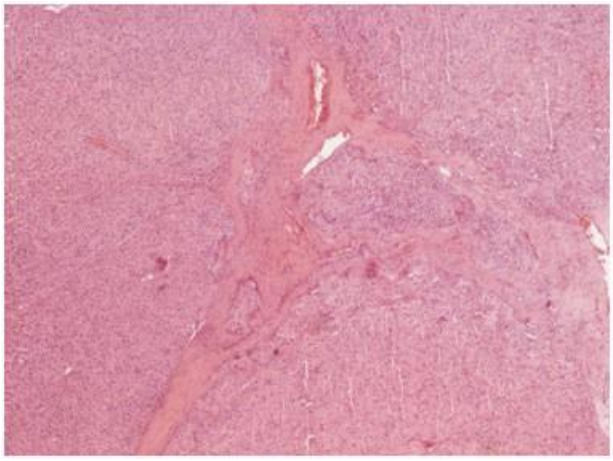

Figure1A: Lightmicroscopyshowsasolidmassofnodulesseparated by fibroussepta.(hematoxylinandeosinstain,x40).

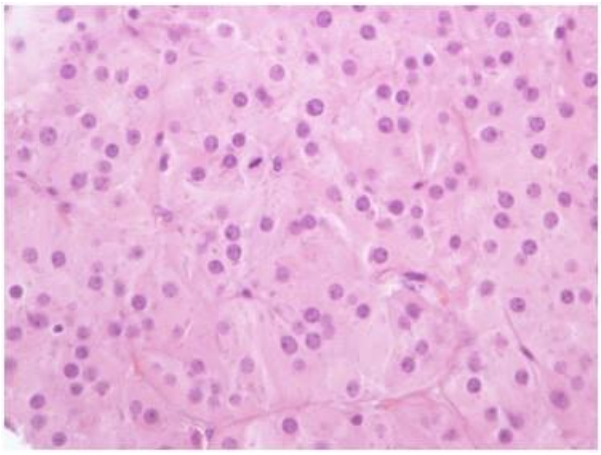

Figure1B: Thelesioniscomposedofpolygonalcellswithvariablyprominent nucleoli and abundant eosinophilic granular cytoplasm (hematoxylin and eosin stain,x400).

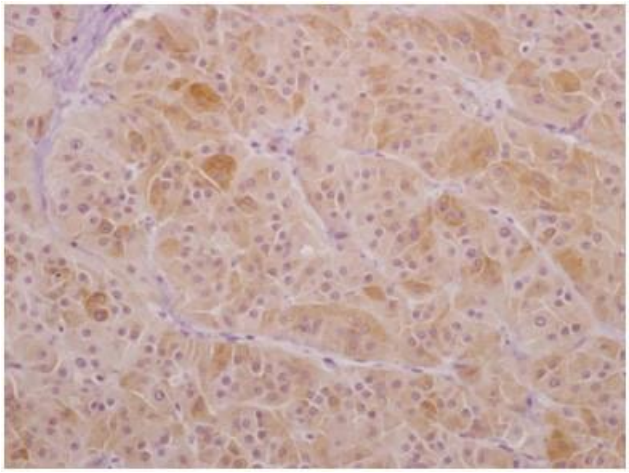

Figure 1C: On immunohistochemistry cells show positive staining for inhibin (hematoxylin and eosin stain, x200).

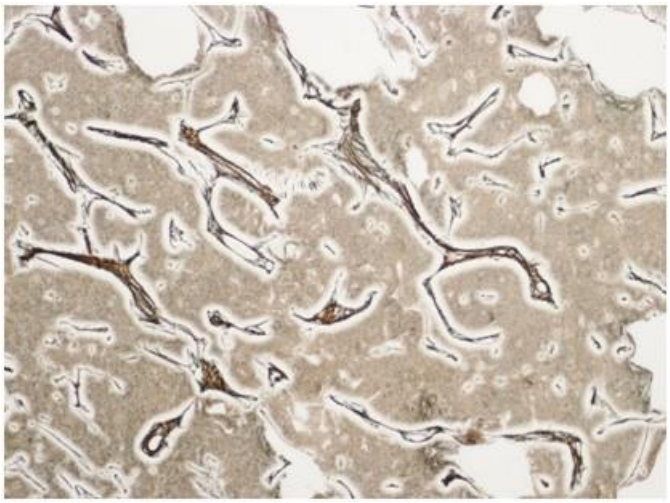

Figure1D: Reticulinstaining(x200).

4. Discussion

Pregnancy luteoma is a relatively rare lesion as fewer than 200 cases have been reported in the literature [2,4]. Most cases are incidental findings during caesarean section or tubal ligation, but occasionally ultrasound antenatal diagnoses have been made [2]. Pregnancy luteomas are thought to be caused by hyperplasia of luteinized stromal cells secondary to stimulation by beta-human chorionic gonadotropin (β-hCG) [5]. In women with PCOS, stromalcellhyperplasiamayantedatepregnancy[6].However,β-hCG appears unlikely to be the only etiological factor, because the lesions are not reported in gestational trophoblastic disease or early pregnancy,whenβ-hCGlevelsarehighest[2,7].Clinically,luteo- mas are often silent and only discovered incidentally during peripartumsurgery.In25%ofcases,luteomasarehormonallyactive, secreting androgens, which can result in maternal hirsutism and fetalvirilization[8].Virilizationofthefemalefetusoccursinhalf of the patients with maternal hirsutism, which results in clitoral enlargement and ambiguous genitalia. Fetal sensitivity to maternal serum androgen depends on both the age at which exposure occurs and the ability of the placenta to aromatize androgens into estrogens.Male fetuses are not affected by this condition [9-11]. Luteomas represent a diagnostic and therapeutic challenge because they can mimic a malignant ovarian tumor.The differential diagnosis for pregnancy luteomas includes granulosa cell tumors, thecomas, Sertoli-Leydig cell tumors, pure Leydig (hilar) cell tumors,stromalhyperthecosis,stromalluteomas,andhyperreaction luteinalis.Becauseofthesolidnatureofthemass,itisimpossible todifferentiateluteomasfromothersolidovarianneoplasmssuch as luteinized thecoma, granulosa cell tumor, or Lyedig cell tumor based on imaging characteristics alone [12]. Pregnancy luteomas vary in size, ranging from microscopic to over 20cm in diameter [13,14].Ongrossexamination,cutsurfacesofluteomasaresolid, soft, tan or flesh colored, with hemorrhagic foci. Microscopically they contain large groups of eosinophilic cells surrounded by numerousbloodvessels.Sometimesacordlikepatternorfollicular

arrangement with colloid nest is noted. Cells are intermediate in size between granulosa lutein and theca lutein cells and contain vacuolatedcytoplasm.Intracellularlipidsarerarelyseen[13].On electron microscopy, these cells contain abundant smooth endoplasmic reticulum, dispersed Golgi apparatus, and tubular cristae in mitochondria, similar to other steroid producing cells [15]. On histologicgroundsothersexcord-stromaltumorsoftheovary,including mainly Leydig cell tumor, steroid cell tumor NOS (especiallythe lipid poor variant)and luteinizedgranulomacelltumor, enter the differential diagnosis so that clinical history is very importinordertoreachcorrectdiagnosisofpregnancyluteoma.The management of a suspected pregnancy luteoma depends on the clinical situation and the woman's desires. If the mass is found in thesecondtrimesterwithsizegreaterthan5cm,itisreasonableto eitherobserveor performsurgicalexplorationtoeliminaterisk of torsion,obstructionandrupture[16].Ifconservativemanagement is opted, patients should be evaluated postpartum, because pregnancy luteomas usually resolve 2-3 weeks postpartum.

5. Conclusion

Pregnancy luteoma represents a benign pregnancy-related condition that generally resolves spontaneously after delivery. In most cases, it is asymptomatic and is accidentally detected during caesarean section. High clinical suspicion of pregnancy related lesions/tumors and intraoperative examination of ovaries, the fallopian tubes and the appendix for abnormalities is recommended.

References

1. NHSternberg,"Nonfunctioningovarianneoplasms",inTheOvary, H.G.Grady,Ed.,p.209,Williams&Wilkings,Baltimore,Md,USA. 1963.
2. JRChoi,DLevine,HFinberg."Luteomaofpregnancy:sonographic findingsintwocases",JournalofUltrasoundinMedicine,vol.2000; 877-881.
3. LalwaniN,PatelS,HaKY,ShanbhogueAK,NagarAM,ChintapalliKN. Miscellaneoustumour-likelesionsoftheovary:cross-sectionalimaging review. Br J Radiol. 2012; 85 (1013): 477-486.
4. R F Spitzer, D Wherrett, D Chitayat."Maternal Luteoma of pregnancy presenting with virilization of the female infant", Journal ofObstetrics and Gynecology Canada. 2007; 835-840.
5. VigneropnN,BarrierJ,DegrelleG.Virilizingluteomaduringpregnancy.Acasereportandareviewoftheliterature.JGynecolObstretBiol Reprod. 1981; 10: 147-153.
6. Robboy SJ, Mutter GL, Prat J. Pathology of the Female ReproductiveTract.2nded.Edinbourgh,UnitedKingdom.ChurchLivingstone Elselvier. 2009.
7. Tan ML, Lam SL, Nadarajah S. Pregnancy Luteoma presenting asovarian torsion with rupture and intra-abdominal bleeding. Singapore Med J. 2008; 49: e78.
8. ZanderJ,MickanH,HolzmanK,LoheKJ.Androluteomasyndromeof pregnancy. AM J Obstet Gynecol. 1978; 130: 170-7.
9. VaishaliV,SurinderP,KSChahal,JaspreetSingh.Pregnancyluteoma:Arare case report. Int JAppl Basic Med. 2016;6(4): 282-283.
10. HensleighPA,WoodruffJD.Differentialmaternal-fetalresponsetoandrogenizing luteoma or hyperreaction luteinalis. Obstet GynecolSurv. 1978; 33: 4.
11. Illingworth PJ, Johnstone FD, Steel J. Luteoma of pregnancy: Masculinisation of a female fetus prevented by placental aromitisation. Br J Ostet Gynecol. 1992; 99: 12.
12. Verma V, Paul S, Chahal KS, Singh J. Pregnancy Luteoma: A rarecase report. Int J Appl Basic Med Res. 2016; 6(4): 282-283.
13. Garcia-Bunuel R, Berek JS, Woodruff JP. Luteomas of pregnancy.Obstet Gyneocol. 1975; 45: 4.
14. Verkauf BS, Reitter EO, Hernandez L. Virilization of mother andfetusassociatedwithluteomaofpregnancy.Acasereportwithendocrinologic studies. AM J Obstet Gynecol. 1977; 129: 3.
15. Garcia-BunuelR,BrandesD.Luteomaofpregnancy:Ultrastructuralfeatures. Human Pathol. 1976; 7: 2.
16. KaitlinM,VernKatz,KeithBalderston.PregnancyLuteomas:Clin- ical Presentations and Management Strategies. Obstet and Gynecol Survey.