

Luteoma of Pregnancy: A Case Report

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Abstract: Luteoma of Pregnancy is a rare, non-neoplastic, tumor like lesion of ovary and have increased androgenic activity during pregnancy. Associated symptoms include Acne, Hair loss, Hirsutism, Clitoromegaly, Deepening of voice. Usually, it is asymptomatic condition and diagnosed incidentally during ANC scans or intraoperatively. **Case:** We report a case of 25-year-old, gravida 2, para 1 who presented at 21.4 weeks of gestation with complaint of right sided pain in lower abdomen. On Clinical examination, tenderness was present in right iliac fossa. Ultrasonography was suggestive of Live, intra-uterine, Dichorionic diamniotic Twin pregnancy with ovarian mass probably Luteoma of pregnancy. On detailed history taking, patient admitted that she has few hair growths around breast and chin, developed during present pregnancy. Serum testosterone levels were borderline high. On the basis of Clinical examination and investigations, diagnosis of Pregnancy Luteoma was made. As patient was asymptomatic, conservative treatment was given and further followed up till labor. At 32 weeks of gestation, due to preterm labor, decision to perform normal vaginal delivery was taken and twins delivered successfully. **Conclusion:** Detailed work-up of every adnexal mass in pregnancy should be done judiciously by using Ultrasonography, Doppler, tumor markers, hormonal assay and MRI if required to differentiate Luteoma of pregnancy from ovarian malignancy and to decide appropriate line of management accordingly.

Keywords: Luteoma of pregnancy, hirsutism, virilization, differentiation from malignancy, Androgen levels.

1. Introduction

Luteoma of pregnancy is a rare, non-neoplastic, tumor like lesion of ovary and have increased androgenic activity during pregnancy.

It has relatively higher incidence in Afro-Caribbean females at around 30 to 40 years of age and in those with pre-existing polycystic ovarian syndrome (PCOS) [1]. Luteoma of pregnancy is associated with Acne, Hair loss, Hirsutism, Clitoromegaly, Deepening of voice and virilization symptoms [2]. Usually, Pregnancy Luteoma is asymptomatic condition and diagnosed incidentally during ANC scans or intraoperatively at time of LSCS or post-partum tubal ligation [3]. Luteoma of Pregnancy is often mistaken for having malignant potential and sometimes resulted in surgical removal during 1st trimester [4]. So, detailed work-up of every adnexal mass during pregnancy is important.

Most of the cases resolves completely post-partum, so conservative management under observation with periodic Ultrasonography is preferred. Surgery is often reserved for masses that are highly suspicious for malignancy on imaging or in symptomatic patients [5].

2. Case Report

25-year-old pregnant women with gravida 2, para 1 (Previous normal delivery) with Dichorionic diamniotic twin gestation of 21.4 weeks came to MGM hospital, Kalamboli, Navi Mumbai at OPD with complaint of right sided pain in

abdomen since 10 days. She was known case of Hypothyroidism (On Tab. Thyronorm 25 mcg, OD).

History of Tubal ligation done before 4 years. Thereafter she underwent re-canalization surgery of fallopian tubes 2.5 years back. Gynecological history was unremarkable. On detailed history taking, patient admitted that she has few hair growth around breast and chin, developed during present pregnancy.

On per abdominal examination, uterus corresponds to 26 weeks of gestation, multiple fetal parts felt. FHS-1: Present/ Regular/ 150 bpm. FHS-2: Present/ Regular/146 bpm. Uterus was relaxed. Tenderness was present in right iliac fossa.

On per speculum examination, Cervix & vaginal was healthy. Nitrazine test was negative.

On per vaginal examination, Cervical Os was not dilated, no effacement. Multiple fetal parts were felt. No cervical motion tenderness. No forniceal fullness.



Ultrasonography was suggestive of Live, intra-uterine, Dichorionic diamniotic twin pregnancy of By date 21.4 weeks, BS-1 (By scan): 21.2 weeks, BS-2: 21.5 weeks with normal growth and morphology. Bilateral ovarian size increased. Multiple cysts seen in right ovary with few hypoechoic areas inside it mostly suggestive of 'Luteoma of Pregnancy'. No evidence of torsion.

Ultrasonography Image of 'Luteoma of Pregnancy'

Routine blood investigations including CBC, LFT, RFT, OGTT were within normal limits. Thyroid profile was normal. Tumor markers were sent to rule out malignancy, which came to be negative i.e. CA-125: 2 U/ml (Normal range: 0-45 U/ml), CEA: 3 ng/ml (Normal range: 2.5-5 ng/ml). Androgen levels were borderline high i.e. Serum Testosterone level: 2 ng/ml (Normal range: 0.5-0.8 ng/ml).

Patient was treated conservatively and decision was taken to monitor patient with subsequent periodic monthly follow-ups with ultrasonography and androgen levels if required till 3 months after delivery.

After 3 months, patient came to MGM Hospital Casualty with complaint of spotting per vagina since 1 day. On per abdominal examination, uterus was corresponding to 36 weeks of gestation. Both heart sounds could be auscultated well. Uterus was irritable. On per speculum examination, Cervix & vaginal was healthy. Nitrazine test was negative. On per vaginal examination, Cervical Os was 4 cms dilated, 40% effaced. Ultrasonography was suggestive of Live, intrauterine, DCDA twin pregnancy with by date 32.1 weeks, BS-1 (by scan): 31.9 weeks, BS-2: 31 weeks of gestation. No obvious increase in size of Luteoma of Pregnancy was noted. Also, there was no obvious increase in androgen levels.

Decision to perform Normal Vaginal Delivery was taken and both male babies of 920 grams and 840 gram each were delivered successfully. Both babies shifted to NICU. 1st baby discharged from NICU after 45 days stay but 2nd one demised on 14th day of delivery despite of all possible efforts. Further follow up of patient was taken on monthly basis. Androgen levels came to baseline by 4 weeks post-partum, Luteoma of pregnancy resolved by 3 months after delivery and hirsutism got resolved after 4 months of delivery.

3. Discussion

Luteoma of pregnancy arises from proliferation of luteinized cells under influence of Beta-HCG [6]. Macroscopically, Pregnancy luteoma appears as solid, brown-yellow mass which can be up to 20 cms in diameter. Microscopically, nodules are made up of cells arranged in trabecular/ follicular pattern with stromal cell proliferation [7].

Risk of virilization of fetus depends on Gestational age of onset of hyperandrogenism (e.g., if hyperandrogenism occurs in 1st trimester then risk of virilization is highest) and Placental aromatase functionality.

Luteoma of pregnancy causes virilization in up to 60-70% of female fetus (which includes hirsutism, clitoromegaly, genital malformations) while male fetus is unaffected but is at risk for mental retardation and hypogonadism [9]. Classically, Luteoma of Pregnancy resolves by 3 months post-partum, androgen levels reduce in 2-3 weeks and clinical virilization symptoms resolve in 2-6 months. Sometimes, hirsutism, deepening of voice and clitoromegaly are partially reversible [10].

Due to its solid appearance and increase vascularity on sonography, Pregnancy luteoma is often mistaken for having malignant potential and sometimes resulted in surgical removal during 1st trimester [11]. So, detailed work-up of every adnexal mass in pregnancy is important. Pregnancy luteoma can be differentiated from ovarian malignancy by 'IOTA simple rules' on USG which is based on tumor size, architecture, wall contour, presence of ascites/ acoustic shadows and doppler flow velocities [12]. Also, Tumor markers (CA-125, Alfa fetoprotein, HE-4), Hormonal assay (which includes testosterone levels, androstenedione & dihydrotestosterone levels, Sex Hormone Binding Globulin/ HSBG levels) and MRI if required can be done for differentiation.

Most of the cases of Luteoma of pregnancy are treated conservatively under periodic observation with Ultrasonography as 70% luteomas resolve spontaneously after delivery. Surgical resection if required is done in 'Early phase of 2nd trimester' in case of rupture, torsion, hemorrhage, mass enlargement, high suspicion of malignancy or in case of severe abdominal pain [13]. Surgery for luteoma is avoided in 1st trimester due to risk of abortion/ fetal demise but can be done if malignancy is suspected.

4. Conclusion

Luteoma of pregnancy mostly resolves spontaneously, so treated conservatively. Surgical intervention is reserved if suspicion for malignancy/ symptomatic patients. Detailed and judicious work-up of every adnexal mass in pregnancy should be done by Ultrasonography, tumor markers, hormonal assay for differentiating Luteoma of pregnancy from malignancy and deciding appropriate line of management. Early detection of Luteoma of pregnancy is necessary for prevention of virilization of female baby.

5. Future Scope

Outcomes of Luteoma of Pregnancy can be well studied in case series where a greater number of cases and their outcomes can be compared.

Conflicts of Interest

The Authors have no conflicts of interest.

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