



Case Report

Fetus papyraceous with successful outcome of other twin at term

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ABSTRACT

Introduction: In multiple gestations, Fetus papyraceous is a rare obstetric complication, the occurrence of which in twin cases is 1 in 12,500. It may be associated with elevated maternal and foetal complications, including death caused by disseminated intravascular coagulation and organ damage.

Objective: To record a case of uniovular twin pregnancy in the early third trimester with one twin foetus papyraceous, and pregnancy continued until term with a good outcome of co-twin survival.

Materials and Methods: A 25-year-old Gravida 2, Para 1, Living 1 woman with a previous usual vaginal delivery and twin pregnancy with Fetus papyraceous was referred to our hospital at 39 weeks for healthy institutional delivery.

Results: she was admitted and induction of labour done with stripping of membrane and watched the progression of labour along with strict maternal and fetal monitoring. She was monitored by serial ultrasounds with doppler, coagulation profile throughout the pregnancy once the fetus papyraceous was diagnosed which was showing with in normal limits. She delivered vaginally of an alive healthy male baby of birth weight 2.5kg with APGAR score- at 1min-8 and at 5min-10.

Conclusion: Routine ultrasound testing with improved training and the use of modern ultrasound machines with good resolution are needed for the detection of multiple gestations. This would allow for early detection of papyraceous foetuses during pregnancy, potentially avoiding obstetric complications and lowering the risk of mortality.

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1. Introduction

Fetus papyraceous (the paper doll fetus) is a desiccated or mummified fetus, without signs of maceration, that has been flattened by a twin fetus and lies within the membranes of the surviving twin.¹Fetus papyraceous is a rare condition but in recent times, with the increase in Assisted Reproductive Techniques the incidence of multiple pregnancies is rising, which in turn also increased incidence of fetal papyraceous. The reported incidence of fetus papyraceous is one in 12,000 pregnancies compared to 1:190 in twin pregnancies.²

If foetus papyraceous is diagnosed antenatally, the surviving foetus should be evaluated serially using sonography, biophysical profile, doppler, and maternal coagulation factors. Antenatal zygosity and chorionicity testing are recommended. The maturity of the foetus and the type of the placenta decide the timing and protocol for terminating a pregnancy with a surviving twin. In many cases of fetus papyraceous, there are no complications to the mother or the surviving twin. Expectant management with close maternal and fetal surveillance is advised.

There can be maternal complications like: pre-eclampsia, Disseminated intravascular coagulation, Thrombotic thrombocytopenic purpura and fetal complications like: Low birth weight babies, prematurity, Hypoxic ischemic

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encephalopathy, during labour: prolonged second stage of labour, arrest of descent. Other complications can be aplasia cuties, microcephaly, hydrocephalus, eye anomalies, cleft lip, cleft palate, cardiac anomalies.

2. Case History

A 25-year-old Gravida 2, Para 1, Living 1 with previous normal vaginal delivery with twin pregnancy with Fetus papyraceous referred to our hospital at 39 weeks for safe institutional delivery and need of SNCU facility. She conceived spontaneously, her regular antenatal check-ups done in other hospital. According to her medical records this pregnancy was monochorionic diamniotic twin intra uterine gestation with one twin fetus papyraceous at 22 weeks of gestational age. Her LMP was on 18.03.2020, EDD on 25.12.2020. Her first and second trimesters were uneventful. She was monitored by serial ultrasounds with doppler, coagulation profile throughout the pregnancy once the fetus papyraceous was diagnosed which was showing with in normal limits.

She was admitted in our hospital on 21.12.2020. At the time of admission she was conscious, coherent, cooperative. Her temperature normal, pulse rate 86 per min, Bp-110/70 mmhg. Heart and lungs within normal limits. On per abdomen examination uterus was Term gestation, relaxed, cephalic presentation, FHS- 142/min regular, On per vaginal examination cervix soft, long, Os was 1.5-2 cm dilated

2.1. Investigations

Her Hb-10.7gm%, TWBC-9700/cu mm, platelet-2.9lakh/cu mm, Blood.

Group: B+ve, HIV, HbsAg, VDRL- nonreactive, Complete urine examination-within normal limits, Random blood sugar-89mg/dl, PT-11.6,APTT-30, On admission doppler study done it was normal, twin-1: cephalic presentation, placenta-fundoposterior, liquor-adequate for twin-1, FHR-148/min, BPD-8.78cm, HC-33.87cm, AC-31.88cm, FL-7.04cm, GA-36 wks 4 days, weight-2812 grs, twin2: intrauterine demise, CRL-8.31cm corresponding to 14-16 wks.

2.2. Provisional diagnosis

Gravida2, Para1, Living1 with 39 wks 3 days with fetus papyraceous with previous vaginal delivery she was admitted and induction of labour done with stripping of membrane and watched the progression of labour along with strict maternal and fetal monitoring, delivered vaginally of an alive healthy male baby of birth weight 2.5kg with APGAR score- at 1min-8 and at 5min-10.

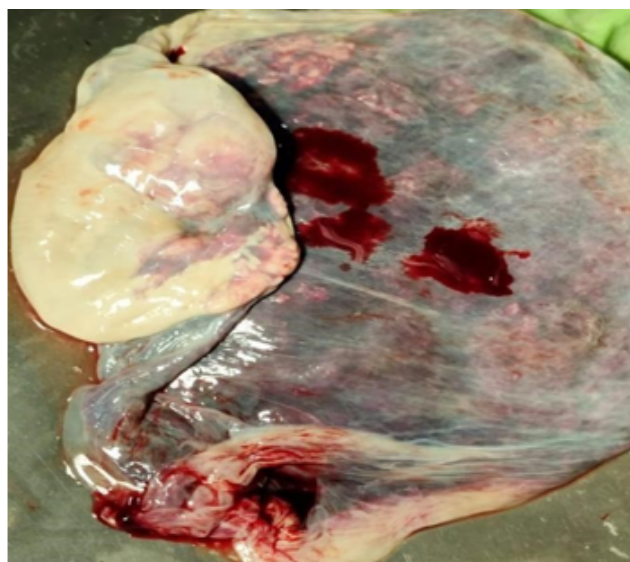


Fig. 1: Placenta afetus papyraceous of 6-7 cm in length, flattened, yellowish fetus like structure was attached to the placenta.

3. Discussion

If antenatal visits with obstetric ultrasound are not carried out, the any condition is difficult to detect, so diagnosed several times only after delivery. It is possible to detect multifetal childbirth with Transvaginal Sonography as soon as 4 weeks after conception. It is not always possible to detect papyraceous fetuses by ultrasound testing in the late second and third trimesters. The papyraceous foetus results from the failure of early twin pregnancy to fully reabsorb the dead foetus, with preservation of the foetus for at least 10 weeks, resulting in mechanical compression of the tiny foetus and fluid loss to resemble parchment paper. It can occur in uniovular and binovular twins. Because of the high level of vascular contacts (85-95%) and TTTS in monochorionic placenta, intrauterine death is three times more frequent in uniovular twins.³

The loss of one twin in the first trimester does not appear to affect the development of the surviving twin, but loss of one twin after the mid-trimester may increase the risk of IUGR, cerebral palsy, preterm labour, preeclampsia, haemorrhage, sepsis, consumptive haemorrhage, labour dystocia, and perinatal mortality in the surviving twin.⁴

Placental or fetal analysis frequently reveals chromosomal abnormalities. Chromosomal analysis of the surviving twin is generally normal. If fetus papyraceous is diagnosed antenatally, close monitoring of both maternal and fetal is of utmost importance with ultrasonography, biophysical profile. Doppler of surviving fetus and maternal monitoring with coagulation profile. Our patient was continuously monitored by serial ultrasounds with Doppler study and coagulation profile throughout the pregnancy once the fetal demise of one twin was diagnosed and

delivered vaginally at term with no maternal and fetal complications.

In Jain D, Purohit RC have reported three out of five pregnancies could be extended to term and had no maternal and fetal complications.⁵ In Dahiya et al have reported two cases of fetus papyraceous delivered at term with no complications to surviving fetus.⁶

Preterm labour, infection from a retained foetus, extreme puerperal haemorrhage, consumptive coagulopathy, and obstruction by a low-lying foetus papyraceous causing dystocia leading to caesarean delivery are all examples of maternal complications. To avoid serious complications, it's important to get a diagnosis as soon as possible. It's important to reassure the patient that in the vast majority of cases, a normal outcome is anticipated. Consumptive coagulopathy in the mother as a result of a late foetal death is an unusual complication. The release of tissue thromboplastin from the foetal circulation into the mechanical circulation has been proposed as a mechanism to explain coagulopathy associated with IUFD.^{7,8} The maternal coagulation mechanism is believed to be stimulated by thromboplastin, resulting in intravascular consumption of clotting factors and platelets. Fibrinogen is broken down into fibrin degradation products (FDPs) and fibrin-fibrin dimers as the activation of the fibrinolytic pathways increases (D-dimers). There are three types of foetal death complications depending on the gestational period, vanishing twin syndrome in the first trimester, foetus papyraceous in the second trimester, and the macerated twin in the third trimester. The majority of pregnancies end in death during the second trimester.⁹ The length of time between foetal death and delivery determines the degree of compression; the larger the foetus, the more difficult it is to become a foetus papyraceous.¹⁰ Twin-twin transfusion syndrome, membranous or velamentous cord insertion, true cord knot, cord stricture, placental insufficiency, and congenital defects are some of the causes of intrauterine death of one fetus.^{11,12}

Close monitoring is of critical importance. The coagulation profile should be tested every 2 weeks, and ultrasound, biophysical profile, and Doppler should closely track the surviving twin's well-being. Before making the decision to continue pregnancy, any abnormalities in the surviving twin should be ruled out.^{13,14} Prompt diagnosis of foetus papyraceous is therefore very necessary for the prevention of further complications and the successful outcome of the survival of the foetus. It is really necessary to assure the parents. A unusual recorded complication is maternal consumptive coagulopathy due to the foetal death of a single twin.^{15,16}

4. Conclusion

All twin pregnancies with one fetal demise should be managed in tertiary care centres with good neonatal

support. A management plan should be individualized, For successful pregnancy outcome careful fetal and maternal monitoring is required. For the detection of multiple gestations, routine ultrasound testing with better training and the use of modern ultrasound machines with good resolution is necessary. This will enable early pregnancy to be diagnosed with papyraceous fetuses and could avoid potential obstetric complications and decrease the risk of mortality and morbidity for the surviving foetus.

5. Conflict of Interest

There are no conflicts of interest in this article.

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References

1. Daw EG. Fetus vanescens, fetus compressus and fetus papyraceus. *J Obstet Gynecol.* 1992;12(6):375–6.
2. Usharani N, Suyajna D, Joshi D, Veena. Fetus papyraceous: A rare case report and review of literature. *Int J Sci Study.* 2015;3(4):184–7.
3. Rahman H, Pathak R, Dubey S. Fetus papyraceous in uniovular twin; death of one twin in early third trimester and successful outcome of other twin at term: a rare case report. *Gen Med (Los Angel).* 2013;1(4):1–3. doi:10.4172/2327-5146.1000118.
4. Sandhya G, Reshika G. Fetus Papyraceous in Monochorionic Diamniotic Twins. *J Obstet Gynaecol India.* 2019;69(1):4043–4043.
5. Jain D, Purohit RC. Review of twin pregnancies with single fetal death: management, maternal and fetal outcome. *J Obstet Gynecol India.* 2014;64(3):180–3. doi:10.1007/s13224-013-0500-5.
6. Dahiya P, Bains R. Conservative management of fetus papyraceous: a report of two cases. *Oman Med J.* 2014;29(2):132–4.
7. Finley BE. Acute coagulopathy in pregnancy. *Med Clin North Am.* 1989;73(3):723–43. doi:10.1016/s0025-7125(16)30669-1.
8. Weiner AE, Reid DE, Roby CC, Diamond LK. Coagulation defects with intrauterine death from Rh isosensitization. *Am J Obstet Gynecol.* 1950;60(5):1015–22. doi:10.1016/0002-9378(50)90507-2.
9. Daw E. Fetus papyraceous-11 cases. *Postgrad Med J.* 1983;59(695):598–600. doi:10.1136/pgmj.59.695.598.
10. Benirschke K. Intrauterine death of a twin: Mechanisms, implications for surviving twin, and placental pathology. *Semin Diagn Pathol.* 1993;10(3):222–31.
11. Akbar M, Ikram M, Talib W, Saeed R, Saeed M. Fetus papyraceous: demise of one twin in second trimester with successful outcome of second twin at term. *Professional Med J.* 2005;12(3):351–3. doi:10.29309/TPMJ/2005.12.03.5136.
12. Benirschke K. Intrauterine death of a twin: Mechanisms, implications for surviving twin, and placental pathology. *Semin Diagn Pathol.* 1993;10(3):222–31.
13. Akbar M, Ikram M, Talib W, Saeed R, Saeed M. Fetus papyraceous: demise of one twin in second trimester with successful outcome of second twin at term. *Professional Med J.* 2005;12(3):351–3.

14. Hagay ZJ, Mazor M, Leiberman JR, Biale Y. Management and outcome of multiple pregnancies complicated by the antenatal death of one fetus. *J Reprod Med.* 1986;31(8):717–20.
15. Ong SS, Zamora J, Khan KS, Kilby MD. Prognosis for the co-twin following single-twin death: A systematic review. *BJOG.* 2006;113(9):992–8.
16. Novak CM, Patel SV, Baschat AA, Hickey KW, Petersen SM. Maternal coagulopathy after umbilical cord occlusion for twin reversed arterial perfusion sequence. *Obstet Gynecol.* 2013;122(2):498–500.

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