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Case Report

Heteropagus Parasitic Conjoined Twin- A Case Report

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ABSTRACT

Parasitic conjoined twins are a type of heteropagus conjoined twins which in turn are asymmetrically conjoined twins. Heteropagus parasitic twins are monochorionic monoamniotic twins and are very rare form of congenital anomalies. The exact pathogenesis of heteropagus twinning is uncertain and may be due to an ischemic event at early gestation or incomplete cleavage of the inner cell mass of the blastocyte. A stillborn conjoined twin is reported here with birth weight of 4.1 kg. The conjoined twin is found to be heteropagus parasitic one. The smaller parasitic twin was joined to the abdominal region of normal looking autositic twin. All monochorionic monoamniotic twins should be carefully assessed with antenatal ultrasonography to exclude any possibilities of conjoined twin.

Keywords: conjoined twin, heteropagus, parasite, autosite.

INTRODUCTION

Heteropagus (parasitic) twinning refers to a rare type of conjoined twinning in which an incomplete small parasitic twin is attached to a normal host on whom it is dependent. [1] The normal host is known as an autosite. [2] Heterotopic conjoined twins are exceedingly rare; occurring in about 1 to 2 million live births. [3]

Conjoined twins may be classified as symmetric or asymmetric. The asymmetric type, heteropagus twinning is characterized by an incomplete and parasitic portion, usually smaller than the autosite (the well-formed fetus). The parasite (the dependent fetus) may be attached to or included in the autosite. [4]

The incidence of conjoined twins is generally considered to be 1 in 50,000 to 200,000 births worldwide; however, only 10% of conjoined twins are heteropagus. Because of the low incidence of heteropagus conjoined twins, statistics on these twins are generally lacking. [5]

The term Heteropagus Twin was given by Potter & Craig, [6] while Willis termed this condition as Parasitic United Twins. [7] The exact pathogenesis of heteropagus twinning is uncertain and may be due to an ischemic event at early gestation or incomplete cleavage of the inner cell mass of the blastocyte. [4]

A case of stillborn heteropagus parasitic conjoined twin is reported here.

CASE REPORT

A term stillborn asymmetrical conjoined twin with birth weight of 4.1 kg was delivered by emergency caesarian section to a 32 year old lady with no family history of twining and absence of any antenatal checkup or antenatal ultrasonographic examination. The past obstetrical history was unremarkable.

On examination, it was found that a small poorly developed fetus (parasite) was attached on the abdomen of a normal fetus (autosite) (figure no.1).Thoracic region of parasite was attached with right abdominal region of the autosite (figure no.1). The parasitic twin was smaller than its host. Autosite had well developed head and neck with normal eyes, nose, lips and external ear (figure no.2). The host had normal upper limbs, thorax with umbilical cord attached on the umbilicus (figure no.1 and 2). The genitals could be identified as male in the autosite with a rudimentary penis was seen but no anal opening was observed (figure no.6).

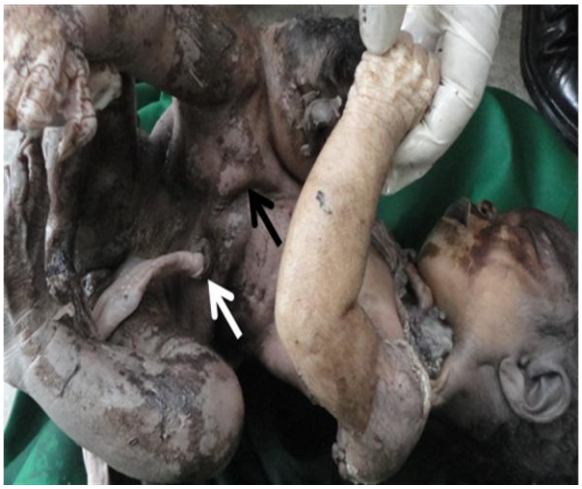

Figure no.1: Heteropagus parasitic conjoined twin. Thoracic region of parasite attaches with right abdominal region of autosite (black arrow). Both the twin share single umbilicus with umbilical cord (white arrow).

Figure no.2: Both autosite and parasite have well developed upper limbs. Parasite have head (black arrow) but neck was absent.

All together, three lower limbs were observed on the present conjoined twin. The lower limbs could be considered as right, left and middle (figure no.3). The left lower limb was well developed and no deformity was observed (figure no.3). It seemed to be the left lower limb of the autosite. The middle lower limb was also well developed and no deformity was observed (figure no.3). It could be the lower limb of the parasitic twin.

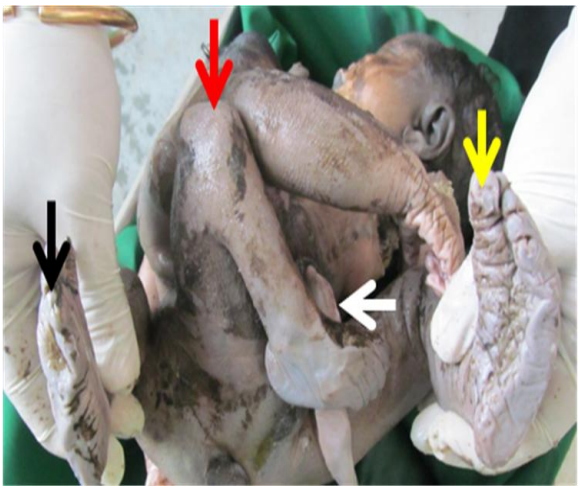

Figure no.3: The stillborn conjoined twin possess three lower limbs. These lower limbs are considered as right (black arrow), middle (red arrow) and left (yellow arrow). Umbilical cord is indicated by white arrow.

Interestingly, the third lower limb i.e. right one, which seemed to be the right lower limb of the autosite, showed some deformity. The foot of the right lower limb observed like two foots were fused at the planter surfaces with total of seven digits which were arranged in two sets, lateral and medial (figure no.4). The lateral set had three and the medial set had four digits (figure no.4). The two sets of digits were facing each other at their planter surfaces. The medial set which contained four digits; the last two digits were fused (figure no.4).

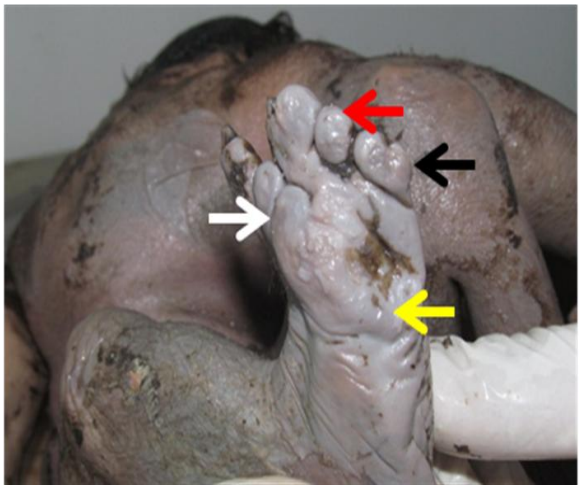

Figure no.4: in the right lower limb there is fusion of two foot at their plantar surface (yellow arrow). Two sets of digits are there medial (red arrow) and lateral (white arrow) which contain four and three number of digits respectively. Last two digits of medial set are fused (black arrow).

The parasite had poorly developed head having scalp hair with poorly developed external ears with pinnae. Right external ear was larger than left (figure no.5). The right and left external ear instead of located on the lateral surface of head were observed on the anterior surface of the head (figure no.5). No other structure like eye, nose and lips were observed (figure no.5). Neck was also not developed on the parasite (figure no.2). There was no deformity observed in both the upper limbs of the parasite (figure no.2). Thorax was poorly developed which was attached with the right side of abdomen of the autosite. Genital were poorly developed and more of female like. Anal opening was observed (figure no.6).

Figure no.5: The head of parasite with absence of facial features like eyes, nose, mouth etc. External ear like structures i.e. pinnae are observed on the anterior surface of head with right (black arrow) one is larger than left (white arrow) one.

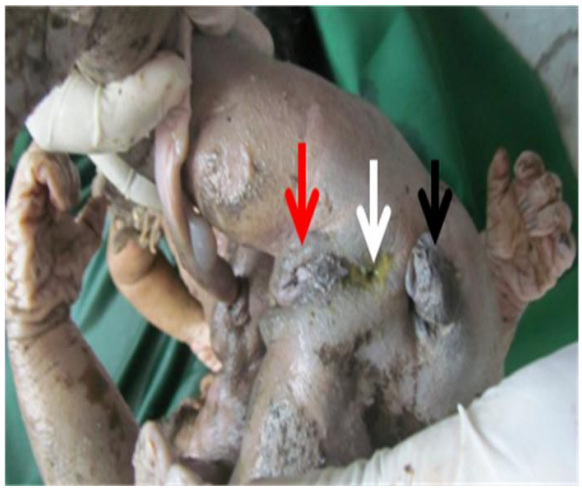

Figure no.6: Female external genitalia of parasite (red arrow) with its anal opening (white arrow) but autosite has male external genitalia (black arrow) with absence of anal opening.

Attendants refused any further imaging investigation and dissection of this stillborn parasitic twin and thus the case was handed over to the attendant.

DISCUSSION

Conjoined twins are rarely observed, but heteropagus conjoined twins occur even

less frequently. [5] Most of the reported cases of parasitic twin are from developing countries and were managed in their infancy or early childhood. [8] Asymmetric and parasitic conjoined twins are anomalies of monochorionic monoamniotic twins. [9]

Logrono et al. stated that heteropagus twinning occurs due to fusion of 2 embryos prior to implantation. [10] It is also postulated that selective ischemic damage in utero, results in death and partial resorption of one of the twin which eventually will be a parasitic twin attached to the normal host. [11] In spite of these theories, the final etiopathogenesis of heteropagus twins remains enigmatic. There is a marked female predominance among diplopagus conjoined twins. But for unknown reasons, male predominance is seen in heteropagus (parasitic) twins. [12]

Parasitic twinning has a varied anatomy and morphology depending on the location and attachment to the host (autosite). [2] Presentation also depends on the extent of embryological damage incurred and the timing of the event. [13]

Common attachment sites of parasitic twins are the oral region, the mediastinum, and the pelvis. [14]

Another problem leading to increased mortality among twins is twin-twin transfusión syndrome. In this condition, placental vascular anastomoses, which occur in a balanced arrangement in most monochorionic placentas, are formed, so that one twin receives most of the blood flow, and flow to the other is compromised. As a result, one twin is larger than the other. The outcome is poor, with the death of both twins occurring in 50% to 70% of cases. [15] Misexpression of genes, such as Goosecoid, may also result in conjoined twin. [15]

CONCLUSION

Conjoined twins should be suspected in all monochorionic, monoamniotic twin pregnancies and careful sonographical assessment should be undertaken to exclude any of the classical signs which are suggestive of conjoined twins.

REFERENCES

1. Spencer R. Parasitic conjoined twins: external, internal (fetuses in fetu and teratomas), and detached (acardiacs). Clin Anat 2001;14:428-44.
2. Chadha R, Lal P, Singh D, Sharma A, Choudhury SR. Lumbosacral parasitic rachipagus twin. J Pediatr Surg 2006;41:E45-8.
3. Hwang EH, Han S, Lee JS, et al. An unusual case of monozygotic epigastric heteropagus twinning. J Pediatr Surg 1996; 31: 1457-60.
4. Curry EK, Schraibman V. Epigastric heteropagus twinning. J Pediatr Surg 2001; 36:11–15.
5. Xie JT, Zhou L, Yang ZL, Sun HY. Epigastric heteropagus conjoined twins: two case studies and associated DNA analysis. Clinics (Sao Paulo). 2012; 67(5): 527–9.
6. Potter EL, Craig JM. Pathology of Fetus and Newborn (ed. 3), Chicago IC Year Book 1975; 220-37.
7. Willis RA. Borderland of embryology and pathology. Austin, TX, Butterworth. 1962.
8. Sharma G, Mobin SS, Lypka M, Urata M. Heteropagus (parasitic) twins: a review. J Pediatr Surg 2010;45:2454–63.
9. Gupta DK, Lall A, Bajpai M. Epigastric heteropagus twins - a report of four cases. Pediatr Surg Int 2001; 17(5-6): 481-2.
10. Logroño R, Garcia-Lithgow C, Harris C, Kent M, Meisner L. Heteropagus conjoined twins due to fusion of two embryos: Report and review. Am J Med Genet 1997;73:239-42.
11. Spencer R. Theoretical and analytical embryology of conjoined twins: part I: Embryogenesis. Clin Anat 2000;13:36-53.

12. Bansali M. Epigastric heteropagus twins: 3 case reports with review of literature. J Pediatr Surg 2005;40:1204-8.
13. Higgins KR, Coley BD. Fetus in fetu and fetaformteratoma in 2 neonates: An embryologic spectrum? J Ultrasound Med 2006;25:259-63.
14. Carlson BM. Human Embryology and Developmental Biology. 5th ed. Philadelphia: Saunders, Elsevier Inc.; 2014:107.
15. Sadler TW. In: third month to birth: fetus and placenta. Langman's Medical Embryology. 12th edition. Lippincott Williams & Wilkins, Philadelphia. 2012. p113.

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