ISSN 2073-9990 East Cent. Afr. J. surg

Parasitic Twin Successfully Managed in Uganda - Case Report

N. Kakembo[1], Rachael Ayikoru[1], M. Nabukenya[2], J. Tumukunde[2], P. Nambooze[2], B. Kabajumba[2], D. Ogdzediz[3], J. Sekabira[1].
[1]Department of Surgery College of Health Sciences Makerere University
[2]Department of Anesthesia College of Health Sciences Makerere University
[3]Yale university ,Department of Surgery, New Haven, CT USA
Correspondence to: Nasser Kakembo, Email: kakembon@ymail.com

Parasitic twin or heteropagus refers to asymmetric conjoined twins in which the tissues of defective twin (parasite) are dependent on the cardiovascular system of the other largely intact twin (autosite) for survival. It is a rare condition with isolated cases comprising most of the published work. We report a male baby with abnormal multiple limbs and trunk attached born by spontaneous vaginal delivery at home. Abdominal pelvic ultra sound showed situs inversus. The child had surgical separation of the parasite at five months and the recovery was un eventful.

Key words: parasitic twin, heterpagus, Uganda.

Introduction

Parasitic twin or heteropagus refers to asymmetric conjoined twins in which the tissues of a severely defective twin (parasite) are dependent on the cardiovascular system of the other largely intact twin (autosite) for survival [1]. The estimated incidence of heteropagus twins is about 1 per 1 million live births and isolated cases comprise most of the published work on this rare congenital anomally.Here we present a case of parasitic twin born and managed in Uganda with a good outcome.

Case report

A 3 day old male baby with abnormal multiple limbs and trunk attached was referred to a tertiary hospital from a district hospital where the mother presented soon after birth .The baby was born by spontaneous vaginal delivery at home with the help of relative following 3 hours precipitate labor, the baby cried immediately and had no breathing challenges but was noted to have an abnormal trunk and limbs attached (Figure 1).

This was a fifth pregnancy and the mother was a Para 4+1, she attended antenatal care from a village health center for four times but never had an obstetric scan and the abnormality was never detected antenataly. No history of smoking, alcohol consumption or use of irregular medication during pregnancy .The mother was 28 years old and the father was 37years old at the time of delivery of this baby. They were both peasant farmers with a positive history of twins on the father's side i.e. boy and girl but no history of congenital anomalies. The baby breast fed well and passed urine and stool normally and was fully continent for both urine and stool.

Clinical examination showed a grossly normal baby who was pink and active able to move both upper and lower limbs with no features of dysmorphism and the systemic examination was essentially normal, weighing 5Kg at birth. Notably, in the pelvic region of the normal baby there was a trunk of parasitic twin with vestigial arms with the left having 4 digits, the right having five digits and a palpable skeletal bone. It was pendulous but attached to the pelvic Skelton. There was no head and nor a heart beat in the trunk but with normal skin temperature. It had two lower limbs with five toes each but with bilateral knee joint contractures and the thigh

ISSN 2073-9990 East Cent. Afr. J. surg

bones were fixed to the pelvic Skelton.

The Perini were joined but there was one functional anus and penis with a bifid scrotal sac but both testicles were not palpable. He had a right sided reducible inguinal hernia as well (Figure 2). Several Investigations were conducted including, a Complete Blood Count, a cardiac echo, Plain X-ray/baby gram that showed right sided cardiac and gastric shadows and a left sided liver shadow with duplication of pelvic bones (figure3). Micturating cystourethrogram and barium enema were normal. Abdominal pelvic ultra sound showed situs inversus.

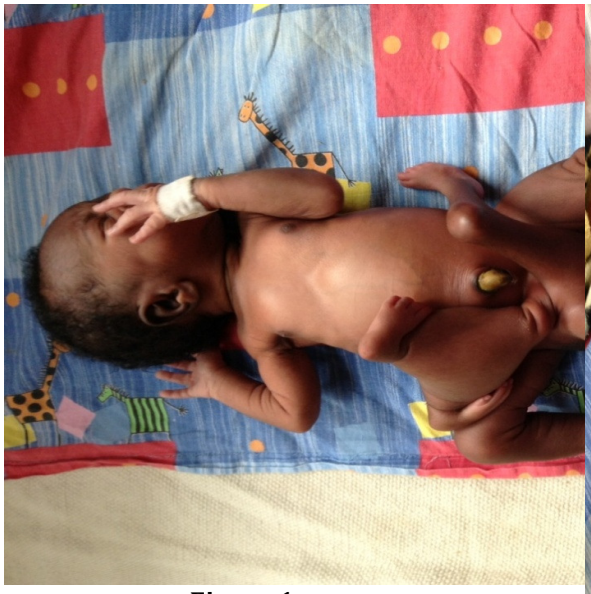

Figure 1

Figure 2

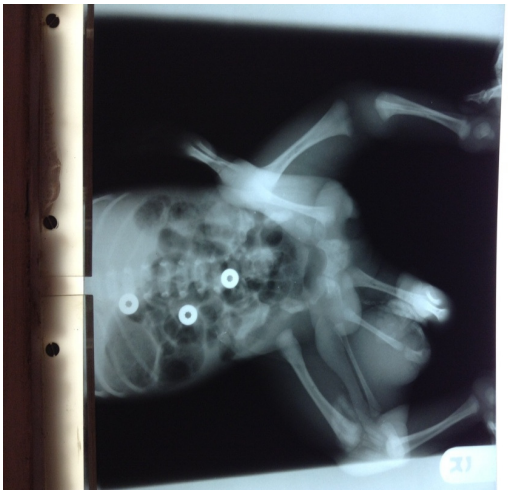

Figure 3

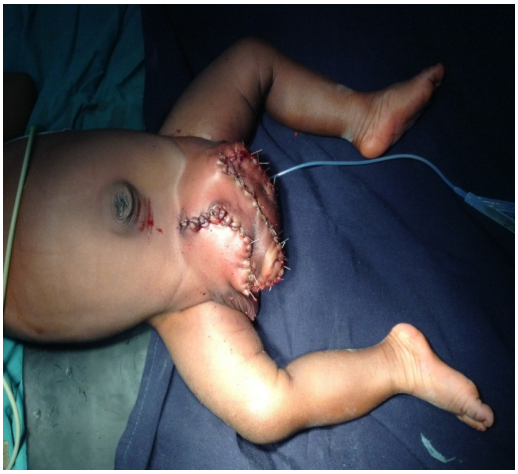

Figure 4

ISSN 2073-9990 East Cent. Afr. J. surg

The child was allowed to grow up to five months when he was relatively 8Kg and surgery was done. Under general anesthesia the patient was catheterized, excised and disarticulated the torso bearing vestigial arms, then disarticulated the abnormal lower limbs at the hip joint leaving an intact pelvic Skelton. Fashioned full thickness skin flaps to close the defect (Figure 4).

The recovery was an eventful save for necrosis of one of the flaps but the wound healed by granulation (figure 5). The child achieved all the developmental milestones for his age, at the time of compilation of this case report, he was able to sit, crawl and stand with a wide gait due to a big pelvic Skelton.

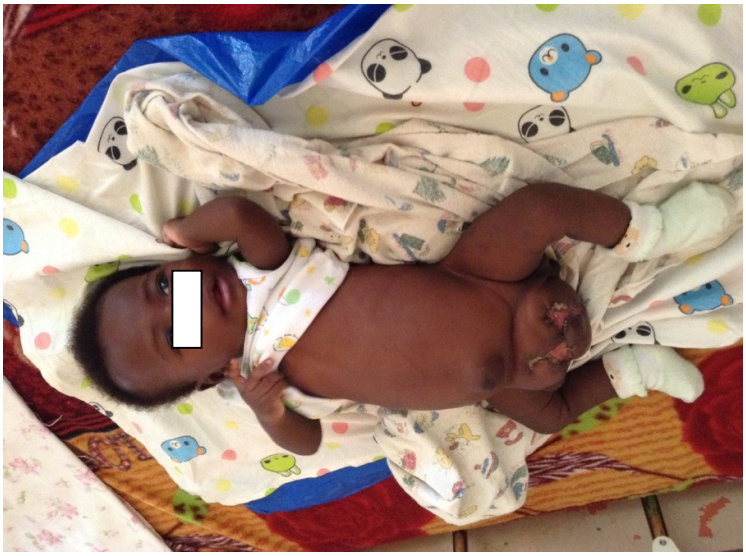

Figure 5

Discussion

Parasitic twin or heteropagus refers to asymmetric conjoined twins in which the tissues of a severely defective twin (parasite) are dependent on the cardiovascular system of the other largely intact twin (autosite) for survival and it's a subset of monozygotic twin gestation[1,3]. The estimated incidence of heteropagus twins is about 1 per 500,000- 1 million live births[1, 3]. Isolated cases comprise most of the published work on this rare congenital anomaly. The incidence of conjoined twins is generally 1 in 50,000 to 200,000 births worldwide however only 10% of conjoined twins are heteropagus[8].

The management of conjoined and parasitic twins in developing country is a big challenge often discovered at birth as opposed to developed countries where antenatal diagnosis is possible at 12 weeks of gestation[2]. Similarly in this particular case the abnormal limbs and torso were only seen ad delivery despite the four antenatal visits without any obstetric ultrasound scan.

The etiology of heteropagus twins remains a mystery with two major theories proposed; the fusion theory where the anomaly occurs by the end of second week of gestation when two heterozygote embryos fuse together to form a common embryonic structure with embryonic discs but one yolk sac . However DNA analysis of the autosite and parasite has demonstrated them to be homozygotic.

ISSN 2073-9990 East Cent. Afr. J. surg

The fission theory with incomplete division of the embryo followed by subsequent fusion at 14-15 day after fertilization resulting in conjoined twining. Heteropagus arises with ischemic atrophy or early malnourishment in one of the twins that induces selective degeneration in upper half of the body making it totally dependedent for growth on the aurosite[3, 6, 9]. Probably this is due to oversensitivity of the brain, heart and lungs to ischemia. In this particular case the torso was devoid of the head, hear t and lungs.

Parasitic twins are classified as follows; an externally attached parasitic twin, an enclosed fetus in fetu, an internal teratoma, or an acardia connected via the placenta[4,5]. Much as parasitic twin is a rare anomaly obstetricians should be aware of the existence of the parasite during prenatal examination so that delivery at tertiary center is proposed for optimal neonatal intensive care and pediatric surgical intervention[4].This particular child was born at home in the hands of un skilled person and with no diagnostic prenatal ultrasound.

The diagnosis of Conjoined twins should be considered in any twin pregnancy that has single placenta, no visible separating amniotic membrane and polyhydramions that occurs in as many as 50% of conjoined twin pregnancy compared with 10% of normal twin pregnancy and 2%of singleton pregnancy[6]. Prenatal ultrasound can diagnose conjoined twins as early as 12 weeks of gestation with the following features; inseparable fetal bodies and skin contours, unchanged relative positions of fetuses, both fetal heads at the same level and a single umbilical cord with more than three vessels[6,7]. The management of this set of parasitic twins involved investigations and then had surgical excision of the parasite with simple closure of the defects using local skin flaps. An epigastric heteropagus twin in Austria was managed similarly by surgical separation of the parasite with successful closures of the abdominal wall defect of the autosite[10] and four similar cases were managed the same way in Thailand with one mortality and three survivors[11].

Conclusion

This was a unique case amidst scarcity of resources but it emphasized the need to strengthen antennal care services in the region in order to make prenatal diagnosis of similar conditions.

Acknowledgement.

The department of radiology and anesthesia for their role in the work up and management of this child respectively.

References

1. Gaurav Sharma,Sheila S Nazarian Mobin, Michael Lypka , Mark Urata.. Heteropagus (parasitic) twins: a review. J. Jpedsurg2010.07.002
2. Gnassingbe Komla, Adjenou Komla &Tekou Hubert A. Experience of managing conjoined and parasitic twins from a developing country. APSP J Case Rep. 2013 sep-Dec 4(3):52
3. Kestutis Trainavicius, Vytis Kazlauskas, Pranas Gurskas. Epigastric heteropagus twins j ped Surg case Reports 1 (2013)114-117
4. Ahmet Gul, Hilil Aslan and Yavuz Ceylan. Prenatal diagnosis of pygopagus tetapus parasitic twin :case report. BMC Pregnancy Child birth .2004;4:13
5. Spencer R. Parasitic conjoint twins:external , internal (fetuses in fetu and teratomas), and detarched (acardiacs). Clin Anat 2001;14(16):428-44
6. Lewis Spitz. Conjoint twins. Review . Prenat Diagn 2005;25:814-819

ISSN 2073-9990 East Cent. Afr. J. surg

7. Khalid Kamal, Conjoint twins work up . Medscape
8. Jun-tao Xie and Hong-yu-Sun. Epigastric heteropagus conjoined twins ; two case studies and associated DNA analysis . Clinics (Sao Paulo) 2012 May ;67(5):527-529
9. Logrono R, Garcia-Lithgow C, Harris C, Kent M, Meisner L .Heteropagus conjoined twins due to fusion of two embryos; case repot and review Am J Med Genet 1997 Dec19:73(3):239-43
10. Hager J,Sanal M,Trawoger R, Gassner I, Oswald E, Scheefer G, Mikuz G, Sergi C. Conjoined epigastric heteropagus twins: excision of a parasite twin from the anterior abdominal wall of her sibling. Eur J Pediatr Surg. 2007 Feb; 17(1):66-71

2. Tongsin A, Niramis R, Rttanasuwan T. Epigastric heteropagus twins : a report of four cases J Med Assoc Thai 2003 Aug ; 86 Suppl 3:S605-9