Original Article

Challenges of Management of Childhood Cervical Teratomas in a Developing Country

Les défis de gestion des tératomes infantiles cervicaux dans un pays en voie de développement

Chinda[1] JY, Abubakar[1] AM, Nggada[2] HA.
[1]Paediatric Surgery Unit, Department of Surgery, [2]Department of Human Pathology,
University of Maiduguri Teaching Hospital Maiduguri, Borno state, Nigeria.

Abstract

Background: Cervical teratomas are uncommon tumours in paediatric age groups. These are mostly benign and of favourable outcome when promptly diagnosed and surgically extirpated. The objective of this study is to report our experience with the challenges of management of 5 cases of cervical teratoma.

Patients and Methods: This is a retrospective study of all cases of cervical teratoma managed at the University of Maiduguri Teaching Hospital and the Federal Medical Centre Gombe, Gombe ,Nigeria.

Results: Five cases, comprising 3 neonates and 2 infants. There were 4 females and 1 male. Four of them had predominantly left sided tumour while 1 was right sided. Four had mild to moderate respiratory compromise, which necessitated emergency operation and all the tumours were completely extirpated. Four of the tumours were benign and one malignant. Surgical complications encountered were tracheal perforation, and wound infection in 1 patient, wound haematoma in another, and post-extubation tracheal collapse in one other child which resulted in the only mortality recorded.

Conclusion: Cervical site remains a rare site of teratoma occurrence and respiratory compromise is an ever-present danger peri-operatively because of the presenting large cervical masses, anatomical distortions and attenuation of tissues. Postoperative ventilation is advisable for at least 72 hours to forestall preventable mortality.

Key words: Cervical Teratoma, Children, antenatal diagnosis, Nigeria

Resume

Arrière-plan: Les tératomes sont des tumeurs rares dans les tranches d'âge pédiatriques. Ils sont surtout bénins et aboutissent favorablement quand ils sont diagnostiqués promptement et enlevés par intervention chirurgicale. Cette étude se propose de rapporter notre expérience avec les défis posés par la gestion de 5 cas de tératomes cervicaux. ***Malades et méthodes:*** Il s'agit d'une étude rétrospective de tous les cas de tératomes cervicaux gérés au Centre Hospitalier de l'Université de Maiduguri et au Centre Médical Fédéral de Gombe, à Gombe, au Nigeria. ***Résultats:*** Cinq cas, comprenant 3 nouveau-nés et 2 nourrissons. Il y avait 4 femelles et 1 mâle. Chez quatre des patients, la tumeur était essentiellement du côté gauche et du côté droit chez un autre. Quatre patients souffraient d'une respiration moyennement compromise qui a nécessité une intervention chirurgicale d'urgence aboutissant à l'enlèvement complet de toutes les tumeurs.. Quatre des tumeurs étaient bénignes et 1 maligne. Les complications chirurgicales rencontrées comprenaient la perforation de la trachée, l'infection d'une blessure chez 1 patient, l'hématome d'une blessure chez un autre et, enfin, chez un enfant, l'affaissement postopératoire de la trachée aboutissant au seul décès enregistré. ***Conclusion:*** Le cou demeure un endroit rare pour l'apparition du tératome et l'affaissement respiratoire est un danger toujours présent pendant l'intervention chirurgicale à cause de la présence de grandes masses cervicales, de déformations anatomiques et de l'amincissement des tissus. L'aération postopératoire est à conseiller pendant au moins 72 heures pour prévenir tout décès évitable. ***Mots-clés:*** Tératome cervical, Enfants, diagnostic prénatal, le Nigeria

Introduction

Teratoma is a true neoplasm, which is an assemblage of tissues that are foreign to the part in which it arises and may be found in any part of the body[1]. The cervical site of occurrence is uncommon[2] and accounts for abut 2.3 to 9.3% of teratomas in infancy and childhood[2-6]. Cervical teretomas commonly present as large neck masses with varying degree of respiratory compromise. Although most cervical teratomas are benign, they may be locally aggressive and early surgical extirpation obviates the risk of secondary malignant transformation[7].

We report our experience with the challenges of management of 5 cases of cervical teratoma seen over a 21 year period at the University of Maiduguri Teaching Hospital (UMTH), Borno State and the

Correspondence: Dr. Auwal M. Abubakar, P.O. Box 4088, Maiduguri, Borno state, Nigeria. E-mail walo1ng@yahoo.co.uk

Copyright © 2006 African Journal of Paediatric Surgery
Published by Child Health Ventures

Federal Medical Centre Gombe (FMCG), Gombe, Nigeria.



Fig. 1: Photograph of a 5 months old baby with huge left sided benign cervical teratoma.

Patients and Methods

This was a retrospective study of 5 cases of cervical teratomas managed at the UMTH and FMCG, between 1983 and 2004.The patients' data were collected from the clinical, operative and histological records and were analysed for age, sex, clinical features, operative findings, post-operative complications, outcome of treatment, histology type and follow-up. The histology slides were stained with haematoloxylin and eosin (H & E) and examined by light microscopy.

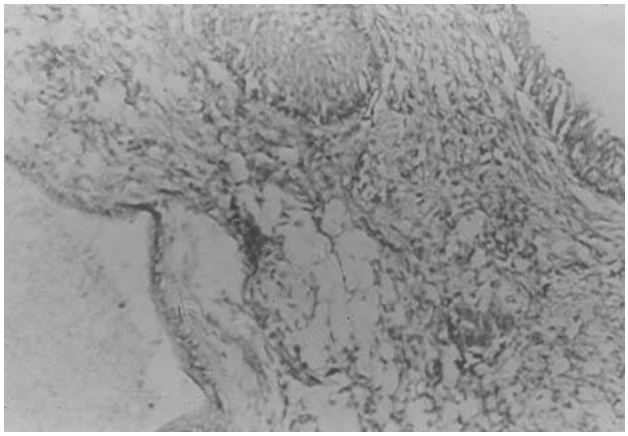


Fig. 2(a): Photomicrograph showing chondrocytes and epithelial lining a cyst of benign cystic teratoma. (H&E X40).

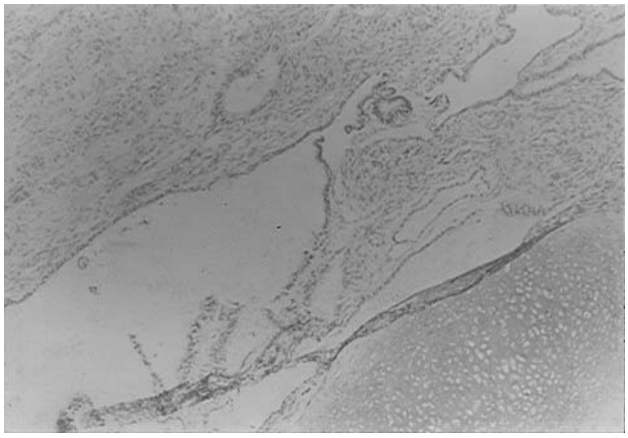


Fig. 2(b): Photomicrograph showing immature tissue of malignant teratoma. (H&E X40)

Table 1: Clinical presentation, historical diagnosis and postoperative outcome of four cases of cervical teratoma

S/No.	Age at Presentation	Sex	Side	Size of Tumour (cm)	Polyhy-dramnious	Respiratory Distress	Histological Diagnosis	Post-Operative compilation	Outcome
1.	3 months	Female	Right	5 x 3	Absent	Mild	Benign	Nil	Alive
2.	12 days	Female	Left	12 x 26	Present	Moderate	Malignant	Tracheal perforation	Alive
3.	9 days	Female	Left	20 x 23	Absent	Nil	Benign	Wound haematoma	Alive
4.	5 months	Female	Left	18 x 12	Absent	Moderate	Benign	Tracheal collapse	Dead
5.	2 days	Male	Left	12 x 16	Absent	Moderate	Benign	Nil	Alive

Results

The features in the 5 patients are summarized in table1. These cervical teratoma accounted for 4.2% of all teratomas seen over the same period. Four of the patients were females and one was a male. Their ages ranged from 2 days to 5 months. One patient had associated polyhydramnious. Four had predominantly left-sided tumour (Fig. 1) while one was right-sided. Four of the patients had mild to moderate respiratory compromise, which necessitated emergency operation during which all the tumours were completely

Copyright © 2006 African Journal of Paediatric Surgery
Published by Child Health Ventures

extirpated. The histological diagnosis showed a malignant teratoma in a 12-day-old neonate, but in the although in other reports[5] right sided tumours were predominant.

Cervical teratomas in the newborn are locally aggressive but almost always benign; this is in contrast to those in adults. Whereas complete local excision is the treatment of choice, it may not always be feasible. Three of our patients had benign lesions and one had a malignancy, they all were completely excised with their intact capsules.

Postoperative tracheal collapse resulted in the only mortality recorded. Earlier studies[7,9] recorded hypoparathyroidism and hypothyroidism complicating this surgery which necessitated replacement therapy. In view of the fact that the cervical teratomas are locally aggressive and respiratory compromise is an invariable complication, early complete surgical removal is suggested to save life and forestall recurrence. Postoperative ventilation where available, for at least 72 hours may improve outcome.

References

1. Ashley DJB. Origin of teratomas, Cancer 1973; 32: 390-394
2. Adejuyigbe O, Odesanmi WO. Cervical teratomas in Nigerian children. West Afr J Med 1989; 8:279-283.
3. Rothchild MH, Catalano P, Urken M, et al. Evaluation and management of congenital cervical teratoma. Case report and review. Arch Otolaryng Head Neck Surg. 1994; 120: 444-448.
4. Bale P.M., Painter D.M. and Colen D. Teratomas in childhood. Pathology, 1975; 7: 204-218.
5. Tapper D. and Lack EE. Teratomas in infancy and childhood; A 54 year experience at the children's Hospital medical centre. Ann Surg. 1983; 198: 398-410
6. Jordan R.H, Genderer M.W.L. Cervical teratomas an analysis, literature review and proposed classification. J Pediatr Surg 1988; 23: 583-591.
7. Nmadu P.T. Cervical teratoma in later infancy: Report of 13 cases. Ann. Trop. Paediatr. 1993; 13: 95-98
8. Dunn C.J, Nguyen D.L., Leonard J.C. Ultrasound diagnosis of immature cervical teratomas, a case report. Am J Perinatol 1992; 9: 445-447
9. Akang EE, Odunjo AO, Aghadiuno PU. Childhood teratomas in Ibadan; Nigeria. Hum Pathol 1992; 23: 449-453.
10. Mabounje OA, Nirodi NS, Lawrie JH, Edington GM. Teratomas in Nigerian Children; East Afr. Med J. 1980; 57:461-469
11. Nmadu P.T. Childhood teratomas in Zaria; Nigeria. East Afr. Med. J. 1995; 72: 551-553.
12. Rosenfeld CR., Coln CD, Duenhoelter JH. Fetal cervical teratomas as a cause of polyhydramnios. Pediatrics 1974; 64: 176-179.

Copyright © 2006 African Journal of Paediatric Surgery
Published by Child Health Ventures

13. De Backer A, Madern GC, Van De Ven CP, Tibboel D, Hazebroek FW. Strategy for managemebt of newborns with

Copyright © 2006 African Journal of Paediatric Surgery
Published by Child Health Ventures