Congenital Nasopharyngeal Immature Teratoma: A First Case Report in Thailand

Mana Taweevisit, MD*, Somboon Keelawat, MD*,
Voranuch Thanakit, MD*, Mookda Chaipipat, MD*,
Kanista Keetacheeva, MD*, Shanop Shuangshoti, MD*

** Department of Pathology, Faculty of Medicine, Chulalongkorn University*

The authors report the very rare case of a congenital immature teratoma arising from the nasopharyx in a full term female neonate. The tumor also extended to the oral cavity, particularly the right tonsillar fossa without intracranial involvement leading to upper airway obstruction and secondary Escherichia coli pneumonia. The immature part of the tumor in the head and neck region is not a poor prognostic indicator and chemotherapy is useless. In the presented case, the mass was widely excised without postoperative complications. To the best of our knowledge, this is the first reported case in Thailand.

Keywords: *Nasopharynx, Immature teratoma, Congenital*

J Med Assoc Thai 2005; 88(5): 698-700
Full text. e-Journal: *http://www.medassocthai.org/journal*

Teratoma is a subgroup of germ cell neoplasms, most frequently arising in the sex organs, such as ovaries and testes. The sacrococcygeal area is the most common site of extra-gonadal teratomas, whereas extracranial head and neck regions are rarely affected accounting for less than 5% of reported cases[1].

The nasopharyngeal teratoma commonly causes upper aerodigestive tract obstruction[2]. The vast majority of previously-recorded cases have described teratomas with mature components derived from the three embryonic germ layers. The authors report herewith the first case in Thailand of a female neonate having immature teratoma of the nasopharynx wildly extending to the soft palate and right tonsillar area.

Case Report

A full term female neonate, weighing 2,610 gm, was referred to King Chulalongkorn Memorial Hospital because of dyspnea and decreased oxygen saturation, 20 hours after cesarean section. Oral examination revealed a firm mass at the palate displacing the uvula to the left side. After establishing the oropharyngeal airway, a computerized tomographic scan of the oral cavity illustrated a tumor, 4 x 3 cm, with heterogeneous density (Fig. 1). The lesion mainly occupied the nasopharynx, and extended to the oral cavity, particularly the right tonsillar fossa. Intracranial extension was not evident.

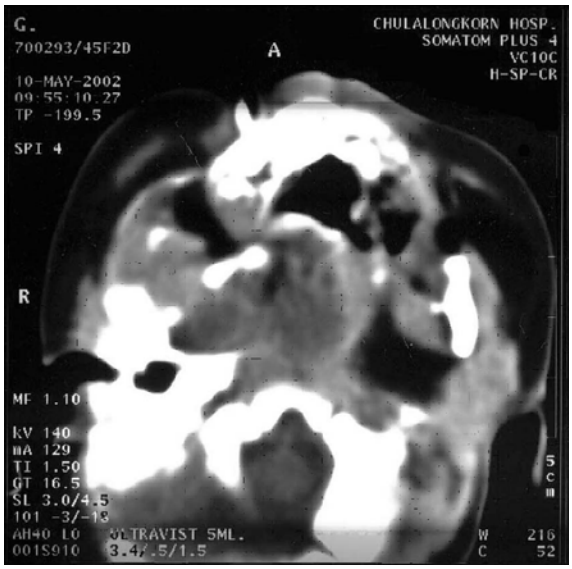

Fig. 1 Computerized topographic scan demonstrates a nasopharyngeal mass with heterogenous density

Correspondence to : Taweevisit M, Department of Pathology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand. Phone: 0-2256-4235, Fax: 0-2652-4208, E-mail: dr_mana4@hotmail.com

The preoperative course was complicated by *Escherichia coli* pneumonia. The patient was intubated, and placed on ventilatory support. After the infection was under control, wide excision was performed under general anesthesia. The surgical specimen, received in 10% formaldehyde solution, consisted of a firm lobulated tumor, measuring 3 x 2.8 x 1.5 cm. It showed gray brown cut surfaces interspersed by multiple cystic spaces (Fig. 2). All sections were embedded in paraffin wax.

Hematoxyline and eosin stained sections of the lesion demonstrated various components, including glial tissue, choroid plexus, respiratory epithelium, cartilage, and choroidal tissue of the eyeball. In addition, foci of primitive neuroepithelium were also observed, approximately 25% of one low-power field (x 10). The pathological diagnosis was immature teratoma of the nasopharynx (Fig. 3).

The postoperative course was uneventful. The patient was discharged 22 days after treatment. Surgery for oral reconstruction was postponed until the patient became more mature or experienced airway discomfort.

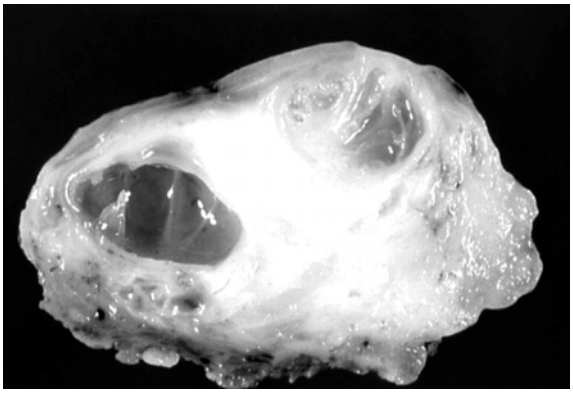

Fig. 2 Bisected mass showing a solid and cystic cut surface

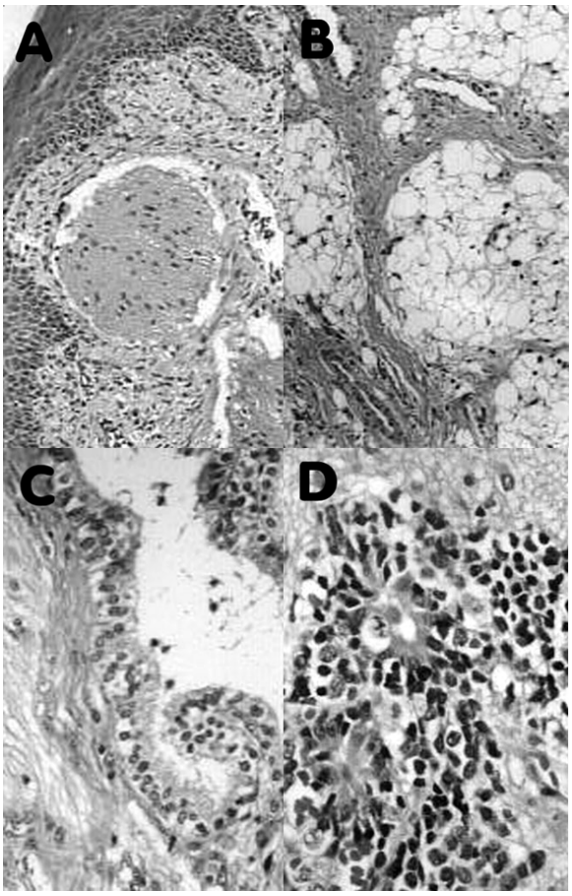

Fig. 3 Various tissue components of the teratoma are shown including glial tissue (A), fat cells(B), respiratory epithelium (C), and primitive neuroepithelium (D)

Discussion

Non-gonadal teratomas are frequently encountered in the first two decades of life, and the majority are detected at birth or within the first few months. Despite female predominance of teratomas elsewhere, there is no gender preference for those affecting the head and neck zone[1].

Teratoma of the nasopharynx typically induces obstruction of the proximal ororespiratory tract, which requires rapid airway management[2,3]. Additionally, congenital teratomas of the head and neck are often associated with distinct deformities of the cranial and facial structures[4]. Other complications include stillbirth, prematurity, abnormal presentation, dystocia, non-immune fetal hydrops, and polyhydramnios due to impaired fetal swallowing[1,2]. Currently, prenatal diagnosis can be made by ultrasonography[5].

Resembling teratomas anywhere, nasopharyngeal teratomas are grossly circumscribed with cystic and/or solid cut surfaces[4]. Histopathologically, they are composed of tissues arising from three fetal germ layers of varying degrees of differentiation[3,4]. The amount of immature neural element in the presented case would be comparable to grade 1 immature teratoma of the ovarian counterpart. Nevertheless, the grading system does not seem to have prognostic implication in the head and neck teratomas as fetal tissues rarely manifest in an aggressive manner[2].

Complete extirpation is the ultimate goal of treatment of head and neck teratomas[2,3]. Adjuvant chemotherapy is not indicated even in tumors with

immature feature[4]. As opposed to malignant transformation, Voegels et al reported a case of infantile immature malignant teratoma from the paranasal sinus who received chemotherapy along with endoscopic tumor removal without recurrence, ten months post-operatively[6]. Surgical resection may, however, be laborious and incomplete because of the complex anatomy and involvement of multiple structures[4]. Recurrence and repeated extirpation are expected, and death is usually a consequence of inoperable tumors[3,4].

In conclusion, the authors describe the first case of congenital immature teratoma originating from the nasopharynx in Thailand. The authors remind that the immature part of the teratomatous tumor is not the adverse factor in the head and neck region, but the tumor size is the major problem leading to mechanical airway obstruction and secondary infection.

Acknowledgement

The authors wish to thank Professor Emeritus Samruay Shuangshoti for reviewing the manuscript.

References

1. Abemayor E, Newman A, Bergstrom L, Dudley J, Magidson JG, Ljung BM. Teratomas of the head and neck in childhood. Laryngoscope 1984; 94: 1489-92.
2. Dehner LP, Mills A, Talerman A, Billman GF, Krous HF, Platz CE. Germ cell neoplasms of head and neck soft tissues: a pathologic spectrum of teratomatous and endodermal sinus tumors. Hum Pathol 1990; 21: 309-18.
3. Wakhlu A, Wakhlu AK. Head and neck teratomas in children. Pediatr Surg Int 2000; 16: 333-7.
4. Mills SE, Gaffey MJ, Frierson HF. Germ cell neoplasms. In: Tumors of the Upper Aerodigestive tract and Ear, Armed Forced Institute of Pathology, Third series, Fascicle 26. Washington DC, 1998; 313-7.
5. Williams LJ, Yankowitz J, Robinson RA, Benda JA. Nasopharyngeal teratoma. Report of a case with prenatal diagnosis and postnatal management. J Reprod Med 1997; 42: 587-92.
6. Voegels RL, Luxemberger W, Stammberger H. Transnasal endoscopic removal of an extensive immature teratoma in a three-month-old child. Ann Otol Rhinol Laryngol 1998; 107: 654-7.

เทอราโทมาชนิดเจริญไม่สมบูรณ์ตั้งแต่กำเนิดบริเวณหลังโพรงจมูก: รายงานผู้ป่วยรายแรกในประเทศไทย

มานะ ทวีวิศิษฏ์, สมบูรณ์ คีลาวัฒน์, วรนุช ธนากิจ, มุกดา ชัยพิพัฒน์, ขนิษฐา คีตาชีวะ, ชนพ ช่วงโชติ

รายงานผู้ป่วยเนื้องอกเทอราโทมาชนิดที่ยังไม่เจริญสมบูรณ์ที่โพรงหลังจมูก 1 ราย เนื้องอกพบมีมาตั้งแต่กำเนิดในผู้ป่วยเด็กหญิงคลอดครบกำหนด ก้อนเนื้องอกยื่นลงมาในช่องปากเยื้องมาที่ร่องของต่อมทอนซิลด้านขวา โดยที่ไม่ลามเข้ากะโหลกศีรษะ ก้อนเนื้องอกทำให้เกิดทางเดินหายใจส่วนบนอุดกั้นและเป็นปอดบวมตามมา สำหรับบริเวณศีรษะและคอนั้น ส่วนที่ยังไม่เจริญสมบูรณ์ในเนื้อเทอราโทมาไม่ใช่ข้อบ่งชี้ในการให้เคมีบำบัด หรือการพยากรณ์โรคที่เลว สำหรับผู้ป่วยรายนี้หลังจากผ่าตัดเอาเนื้องอกออกแล้วไม่เกิดผลแทรกซ้อนแต่อย่างใด ด้วยลักษณะและตำแหน่งของเนื้องอกในผู้ป่วยรายนี้ถือได้ว่าเป็นรายงานผู้ป่วยรายแรกในประเทศไทย