

## Branchial cleft anomalies and endoscopic cauterization of pyriform sinus fistula

가 ,  
 branchial appa-  
 ratus (鰓裂)  
 cavum conchae 1  
 , ,  
 (pharyngeal pouch)  
 (cyst), (sinus), (fistula)  
 , 3가  
 가  
 3 , cutane-  
 ous ectoderm neural plate  
 neural ectoderm 4  
 neural tube ,  
 neural crest cell가  
 (branchial arch) (branchial cleft)  
 1827 von Baer 4  
 , 1832 Ascherson 가 4 , 5 5~6 가  
 가 ,  
 , 1 ,  
 6 mandibular arch  
 가 1  
 2 ( ) 5

가 3, 4  
 , 2, 3, 4 2  
 cervical sinus of  
 His , 7 가 2~4  
 , 8 가  
 (Table 1, 2) (Fig. 1)  
 foregut  
 pharyngeal pouch  
 branchial plate(  
 branchial membrane) hemifacial microsomia, ,  
 Treacher Collins syndrome, -  
 1 4 , 5 branchio-otorenal syndrome,  
 ( )Pierre Robin sequence

Table 1. Derivatives of the branchial arches

Branchial Arch	Bone, cartilage & ligament	Muscle	Nerve & artery
1 <sup>st</sup>	Maxilla Zygoma Temporal squama Mandible Malleus (except manubrium) Incus (except long process) Sphenomandibular lig. Anterior malleolar lig.	Temporalis Masseter Medial & lateral pterygoid Tensor tympani Tensor veli palatini Digastric (ant. belly) Mylohyoid	Trigeminal n. Facial a.
2 <sup>nd</sup>	Styloid process Malleus (manubrium) Incus (long process) Stapes (except footplate) Hyoid (upper body & lesser cornu)	Facial expression mm. Platysma Digastric (post. belly) Stylohyoid Stapedius	Facial n. Lingual a.
3 <sup>rd</sup>	Hyoid (lower body & greater cornu) Epiglottis (partially)	Stylopharyngeus	Glossopharyngeal n. Internal carotid a. Common carotid a. (proximal part)
4 <sup>th</sup> ~6 <sup>th</sup>	Thyroid cartilage Cricoid cartilage Arytenoids cartilage Corniculate cartilage Cuneiform cartilage Epiglottis (partially)	Cricopharyngeus Phx. constrictor (sup., mid. and inf.) Laryngeal mm. (extrinsic & intrinsic)	Vagus n. Accessory n. Aortic arch Subclavian a. Pulmonary a.

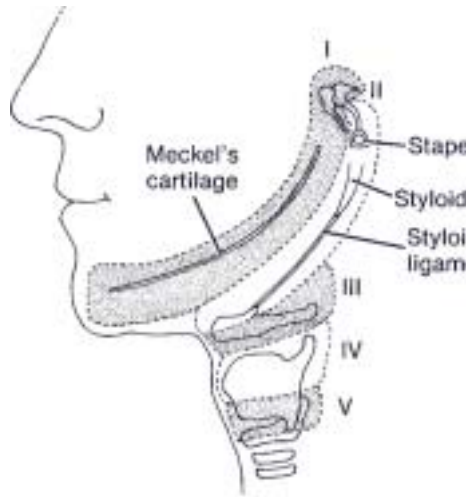


Fig. 1. Skeletal derivatives of the branchial arches.

Table 2. Derivatives of the pharyngeal pouches

Pharyngeal Pouch	Adult Structures
1st	Tympanic membrane Tympanic cavity Mastoid antrum Eustachian tube
2nd	Palatine tonsil Tonsillar crypt
3rd	Inf. Parathyroid glands (Parathyroid III) Thymus (Thymus III, main)
4th	Sup. Parathyroid glands (Parathyroid IV) Thymus (Thymus IV) Parafollicular C cell (thyroid)

Work

(Work, 1972).

1

blind pouch  
(Fig. 2A). 1

2

2B).

2

)

1

1

1

2

1

1

,

,

1

1

fist- ulla(

6

1

1%

1

1, 2

1

,

1

2

,

가

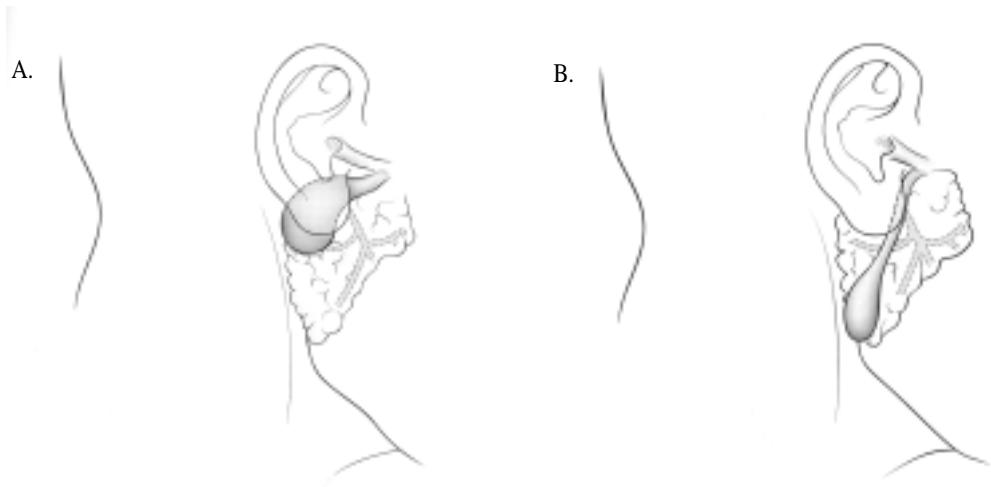


Fig. 2. The routes of the first branchial cleft anomalies, type I (A) and type II (B).

2 가 2 carotid sheath

95%

가 3 가 2/3 가 2/3 1/3 platysma 가 3 가 4

(Fig. 3B).

3A) 2 tonsillar fossa 가 4 ultimobranchial body( 가 4 )

3 thyroid ala 가 3 superior pole 가 3, 4 laryngeal nerve recurrent

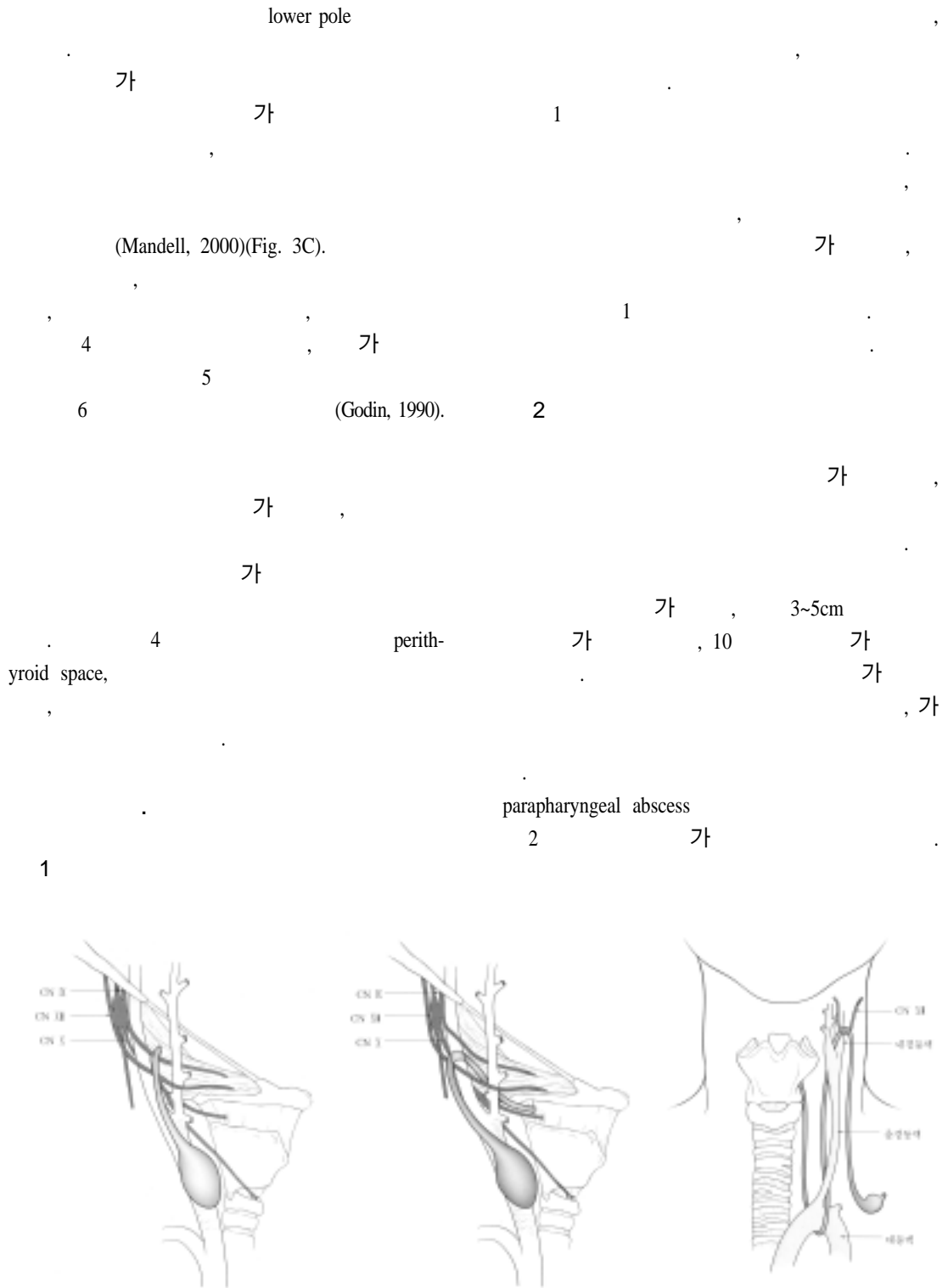


Fig. 3. Routes of the second (A), third (B), and fourth (C) branchial cleft anomalies.

3, 4  
 3 4  
 ,  
 가 , , ,  
 , , ,  
 가 .  
 , parapharyngeal cyst 가 ,  
 , 3 4  
 가 4  
 가  
 , ,  
 10

가  
 가 , 가  
 pseudostratified columnar epithelium  
 ciliated columnar epithelium가  
 가 3  
 4  
 가

(Fig. 4), 가 가

가 가  
 가 가  
 , dermoid cyst  
 가



Fig. 4. The oblique (left) and AP (right) view of the esophagography in the patients with left side pyriform sinus fistula. A fistula tract is originated from the apex of the left pyriform sinus. This is thought to be the 4<sup>th</sup> branchial cleft anomaly.

catheter 가 1  
1, 2 ,  
가  
가 , 가  
가 가  
가 , 가  
가 CT 가 , 가  
가 가 ,  
1, 2 CT , 가 가 ,  
3, 4 (Arndal, 1996). 3~4  
, ,  
, 2  
2  
가 . 2  
가 ,  
, 가 , 가  
가 가  
1 가  
1 가  
가 가 tract

3, 4 가 .

가 .

가 ,

가 .

endoscopic cauterization

. 1998 Jordan

(Jordan, 1998). Kim 16

trichloroacetic acid(TCA)

chemocauterization 12

3

가 가

가

(Kim, 2000).

TCA

45%~50%

reticular dermis

가 (Godin, 1990),

(Monheit, 2001).

4

가

가 가

가 10

(reverse Trendelenburg position).

, 40~50%

TCA

purse-string suture 2~3

3, 4

가 (Fig. 5),



