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# A CASE SERIES OF BILATERAL BRANCHIAL SINUS


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**ABSTRACT** Period of organogenesis is of very precise duration and any factor affecting this period leads to congenital anomaly. Bilateral branchial anomalies are rare (2-3%) increased incidence in familial cases1. Although present at birth, many cases do not become evident until late in childhood and adolescence.

**KEYWORDS :** Bilateral branchial sinus, Congenital anomaly, Embryogenesis

## INTRODUCTION

Branchial anomalies comprise a group of congenital malformations that arise from incomplete obliteration of pharyngeal clefts and pouches during embryogenesis. Fistulas, cysts, sinus tracts and cartilaginous remnants are all clinical manifestation of abnormal sequalae of intrauterine events. Bilateral branchial anomalies are very rare with incidence of around 2-3%[1] and familial incidence is around 6%.

## MATERIALS AND METHODS

This is a retrospective study carried out in department of Otorhinolaryngology of a tertiary care Centre in eastern Uttar Pradesh, India in a duration of 3years.

### Inclusion Criteria

- Patients with bilateral branchial sinus.
- Patients willing to give consent.
- Patients of any age group and gender.

### Exclusion Criteria

- Patients not giving consent.
- Patients with associated congenital anomaly.

### Case 1

7-year-old boy presented to our OPD with pinpoint openings in anterior neck of both sides for past 4-5 years. There is history of associated pus discharge on and off from the openings. There is no history of prior surgery, Incision and drainage or trauma. Sinogram shows sinus openings in bilateral anterior neck along the anterior border of sternocleidomastoid. Patient was planned for tracts excision under General anesthesia. Excision was done and wound was closed in 2 layers. Postop period uneventful.

### Case 2

8-year-old girl presented to our OPD with complaints of pinpoint openings in both sides of anterior neck for past 3-4years with associated on and off pus discharge. There is no history of prior surgery, Incision and drainage and trauma. On examination there was 2 sinus openings along anterior border of sternocleidomastoid. Sinus tracts was excised under General anesthesia and wound closed in 2 layers. Postop period uneventful.

### Case 3

10-year-old boy presented to our OPD with complaints of pinpoint openings in both sides of anterior neck for past 4-5 years. There is history of associated pus discharge. There is no history of trauma, prior surgery. On examination there was a scar mark for approximately 1cm with sinus openings in bilateral anterior neck along anterior border of sternocleidomastoid. Sinus tracts was excised under General anesthesia and wound closed in 2 layers. Postop period uneventful.

### Case 4

9-year-old boy presented to our OPD with complaints of pinpoint openings in both sides of anterior neck for past 5years. There is history of associated pus discharge on and off. There is no history of trauma, prior surgery. On examination there was 2 sinus openings along anterior border of sternocleidomastoid. Sinus tracts was excised under general anesthesia and wound closed in two layers. Postop period uneventful.

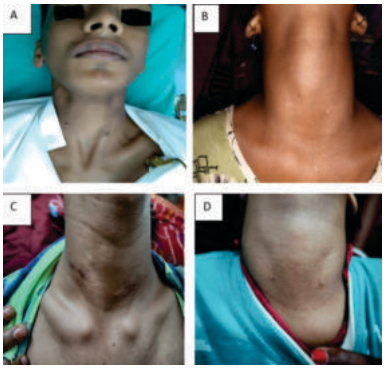


**Figure1 A, B, C, D: Bilateral Branchial Sinuses**

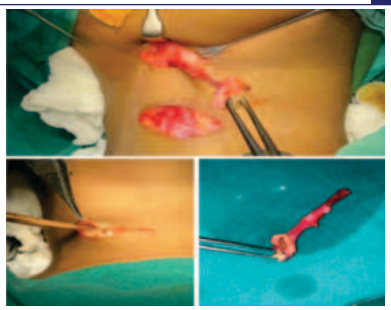

**Figure 2: Intraoperative Pictures of Bilateral Branchial Sinuses**

## DISCUSSION

Branchial cleft anomalies occur as an incomplete obliteration of branchial apparatus during fetal development. The development of branchial apparatus begins at about second week of fetal development, and it is completed by sixth to seventh week[2]. Six arches are numbered in craniocaudal direction that give rise to various head and neck structures. Failure of branchial arches to fuse with epicardial ridge results in persistent external sinus tract[3]. A fistulous tract occurs when the branchial arch does not completely fuse with epicardial ridge resulting in internal breakdown. Von Baer initially described existence of branchial apparatus in 1827 and within 5years its association with branchial fistulas are identified[4]. The term branchial fistula was first used by Heusinger in 1864[5]. 2nd arch anomalies are most common accounting for 90% of all branchial cleft anomalies[6]. They are typically seen along anterior border of sternocleidomastoid muscle. The tract crosses superior-lateral to common carotid artery, glossopharyngeal nerve, hypoglossal nerve and it lies between internal and external carotid arteries. The sinus often ends close to middle constrictor muscle and in other cases opens into tonsillar fossa. Only 5 cases of bilateral branchial cleft anomalies have been reported so far[7].

## CONCLUSION

Bilateral branchial anomalies are very rare condition. Treatment of choice for branchial sinus is complete surgical excision of bilateral sinus in a single setting. No recurrence seen After complete removal of sinus tract.

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