Cukurova Medical Journal
ÇUKUROVA ÜNİVERSİTESİ TIP FAKÜLTESİ

Cukurova Med J 2026;51(1):388-390
DOI: 10.17826/cumj.1838719

LETTER TO THE EDITOR

Asymptomatic unilateral parotid gland agenesis: a rare case report

Asemptomatik tek taraflı parotis bezi agenezisi: nadir bir olgu sunumu

Semih Sağlık[1], Necip Nas[2]

[1]Private Siirt Duru Hospital, Siirt, Türkiye

To the Editor,

Parotid gland agenesis (PGA) is an extremely rare congenital anomaly, infrequently reported in the literature[1]. Since most cases are asymptomatic and diagnosed incidentally, the true prevalence remains uncertain. To date, approximately 32 cases of parotid gland agenesis have been documented. While some cases remain asymptomatic, others may present with xerostomia, facial asymmetry, or increased susceptibility to oropharyngeal infections[2,3]. Although ultrasonography (USG) is commonly used as a first-line imaging modality for evaluating the parotid region, Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) provide higher sensitivity and comparable diagnostic accuracy[4]. We report a rare case of a 44-year-old woman with asymptomatic unilateral agenesis of the left parotid gland.

A 44-year-old woman was referred for a neck CT scan due to dysphagia. No pathological findings were observed that could explain her symptoms. Incidentally, the CT scan (Figure 1) revealed complete absence of the left parotid gland, which was subsequently confirmed by USG (Figure 2). The remaining salivary glands appeared normal, and no other pathology was identified. The patient exhibited no facial asymmetry, syndromic features, recurrent infections, or xerostomia. No history of parotid or other salivary gland agenesis was identified in the family. Physical examination revealed symmetrical bilateral hemifacial contours and a normal right parotid gland. The left parotid papilla was absent. On oral examination, adequate salivary secretion was observed in the oral cavity, and the oral mucosa was moist. Given the absence of clinical symptoms, the patient was counseled regarding oral hygiene and maintenance.

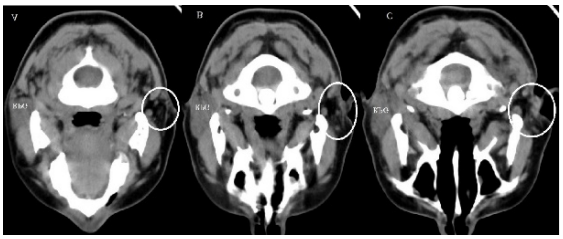

Figure 1. Non–contrast-enhanced CT of the neck: A right parotid gland (RPG) with preserved anatomical configuration and attenuation characteristics is demonstrated. In contrast, the left parotid fossa shows absence of identifiable glandular parenchyma, consistent with congenital parotid agenesis (circle). Axial CT sections depict the parotid region at inferior (A), mid-gland (B), and superior (C) levels.

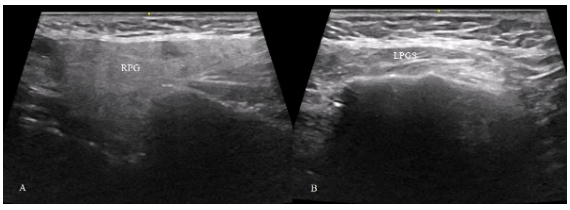

Figure 2. Ultrasonographic findings: The right parotid gland is visualized with preserved echotexture (A), whereas no glandular tissue is identified within the left parotid fossa (B). RPG, right parotid gland; LPGS, left parotıd gland space.

The parotid glands are major salivary glands essential for maintaining orofacial function. Congenital absence of these glands may lead to xerostomia, recurrent infections, facial asymmetry, and

Address for Correspondence: Semih Sağlık, Department of Radiology, Private Siirt Duru Hospital, Siirt, Turkey
E-mail: drsmhsglk@gmail.com
Received: 09.12.2025 Accepted: 14.01.2026

mastication difficulties[5]. However, unilateral agenesis is often asymptomatic and detected incidentally, as illustrated in this case.

Parotid gland embryogenesis, which originates from ectoderm, is particularly critical between the 4th and 8th weeks of gestation. Developmental disruptions during this period may result in unilateral or bilateral, partial or complete parotid aplasia. Although the precise etiology remains unclear, it is hypothesized that anomalies in the development of the first and second branchial arches between the 6th and 7th weeks contribute to this condition[5,6].

Parotid agenesis may occur sporadically, or, in cases of autosomal dominant inheritance, it can be associated with aplasia or hypoplasia of other salivary and lacrimal glands[6,7]. Additionally, it has been reported in association with genetic syndromes such as Down syndrome, Klinefelter syndrome, and lacrimo-auriculo-dento-digital (LADD) syndrome, or as a familial trait[8]. However, unilateral and asymptomatic cases without a family history or syndromic association have also been reported in the literatüre[9,10]. The incidental detection of our case, its clinically asymptomatic course, and the absence of associated syndromic features establish the diagnosis of isolated unilateral parotid gland agenesis.

Radiologic imaging is crucial for diagnosing parotid anomalies. While USG is a convenient first-line method for detecting glandular asymmetry, MRI—with high soft tissue resolution and multiplanar imaging capability—is considered the gold standard for confirming gland presence or absence. MRI not only establishes the diagnosis but also enables detailed assessment of adjacent anatomical structures. In asymptomatic cases, parotid agenesis is often an incidental finding on USG, CT, or MRI, and further investigation is unnecessary if no additional pathology is identified[1,4]. In our case, given that the diagnosis was confirmed by CT and ultrasonography findings, the clinical history and current clinical features supported agenesis, the patient was clinically asymptomatic, and ethical considerations were taken into account, no further diagnostic investigations, such as MRI, were performed.

Management depends on clinical presentation. Asymptomatic unilateral agenesis does not require intervention[1]. In cases with xerostomia or related complications, meticulous oral hygiene, dietary management, saliva substitutes, fluoride rinses, and adequate hydration are recommended. Surgical correction of associated branchial anomalies requires careful planning to preserve the facial nerve[1,3].

In conclusion, given that the majority of salivary gland malignancies originate in the parotid gland, it is essential to differentiate agenesis from infiltrative processes such as glandular atrophy, neoplasms, or infections[8]. In making this differentiation, radiological imaging modalities and a detailed review of the patient's medical history play an important role. Awareness of this rare anomaly is critical for radiologists and clinicians to prevent unnecessary diagnostic or therapeutic interventions.

Author Contributions: Concept/Design : SS; Data acquisition: SS, NN; Data analysis and interpretation: SS; Drafting manuscript: SS, NN; Critical revision of manuscript: SS, NN; Final approval and accountability: SS, NN; Technical or material support: SS, NN; Supervision: SS, NN; Securing funding (if available): n/a.
Ethical Approval: Ethical approval was not required for thismanuscript. The authors state that the patient gave his or her verbal informed consent for the publication of the data and images.
Peer-review: Externally peer-reviewed.
Conflict of Interest: Authors declared no conflict of interest.
Financial Disclosure: Authors declared no financial support

REFERENCES

1. Sgantzou IK, Vassiou K, Gkrinia E, Maiou C, Agrotis G, Vlychou M. Asymptomatic unilateral aplasia of the left parotid gland: an unusual entity and case report. Radiol Case Rep. 2021;16:3453–56.
2. Choi YS, Lee YH, Kim YD. Bilateral parotid gland agenesis in Treacher Collins syndrome: a case report. Ear Nose Throat J. 2019;98:625–26.
3. Berta E, Bettega G, Jouk PS, Billy G, Nugues F, Morand B. Complete agenesis of major salivary glands. Int J Pediatr Otorhinolaryngol. 2013;77:1782–85.
4. Rastogi R, Bhargava S, Mallarajapatna GJ, Singh SK. Pictorial essay: salivary gland imaging. Indian J Radiol Imaging. 2012;22:325–33.
5. Chason HM, Downs BW. Parotid gland. In Anatomy, Head and Neck, 1st ed. Treasure Island, StatPearls Publishing, 2018.
6. Günbey HP, Günbey E, Tayfun F, Kaytez SK. A rare cause of unilateral parotid gland swelling: compensatory hypertrophy due to the aplasia of the contralateral parotid gland. J Craniofac Surg. 2014;25:e265–67.
7. Chapman DB, Shashi V, Kirse DJ. Case report: aplasia of the lacrimal and major salivary glands (ALSG). Int J Pediatr Otorhinolaryngol. 2009;73:899–901.
8. Carlson GW. The salivary glands: embryology, anatomy, and surgical applications. Surg Clin North Am. 2000;80:261–73.
9. Soltani K, Taghdiri M, Keshavarz E, Kanani P. A rare case of unilateral parotid gland agenesis. Radiol Case Rep. 2025; 20:4895-97.

10. Barca I, Della Torre A, Cristofaro MG. An unusual asymptomatic case of unilateral parotid gland agenesis. J Craniofac Surg. 2023; 34:e812-14.