The Laryngoscope

Variant Types of Preauricular Sinuses: Classifications, Clinical Presentation and Management

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Background/ Method/ Result/ Discussion/ Take home message

- Preauricular sinus ,PAS: Common congenital anomalies of the auricle
- Classical type → Pit located ant. to the asc. helix limb
- Variant type
  a. Pit located in other auricular regions
     i. eg. asc. helix crus, external auditory canal(EAC), tragus, lobule
  b. or w/ multiple pits at various locations

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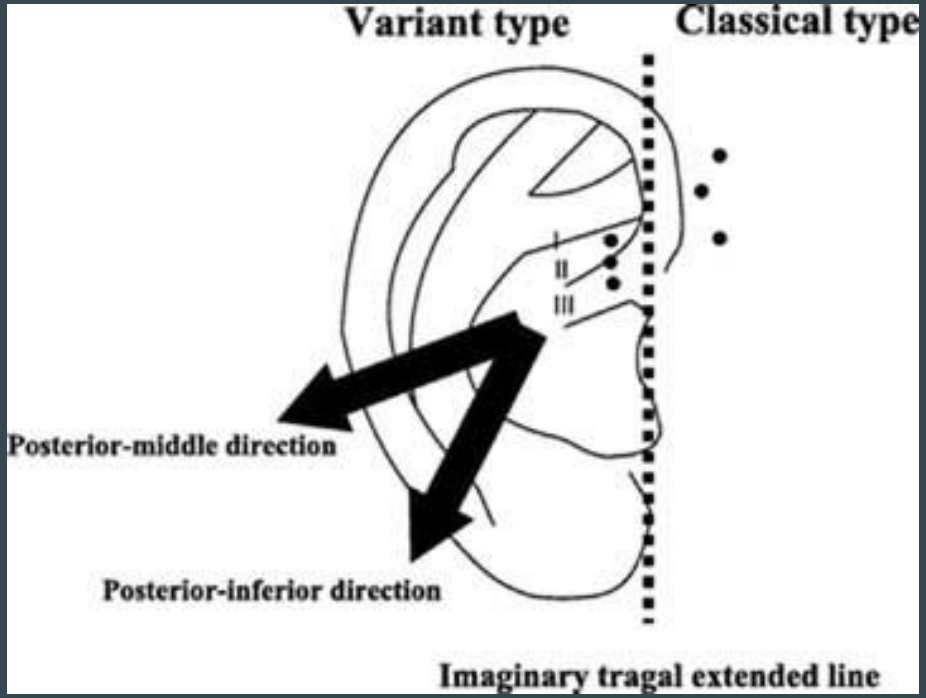

[1]Choi, S. J., Choung, Y. H., Park, K., Bae, J., & Park, H. Y. (2007). The variant type of preauricular sinus: postauricular sinus. The Laryngoscope, 117(10), 1798–1802. https://doi.org/10.1097/MLG.0b013e3180caa1ca

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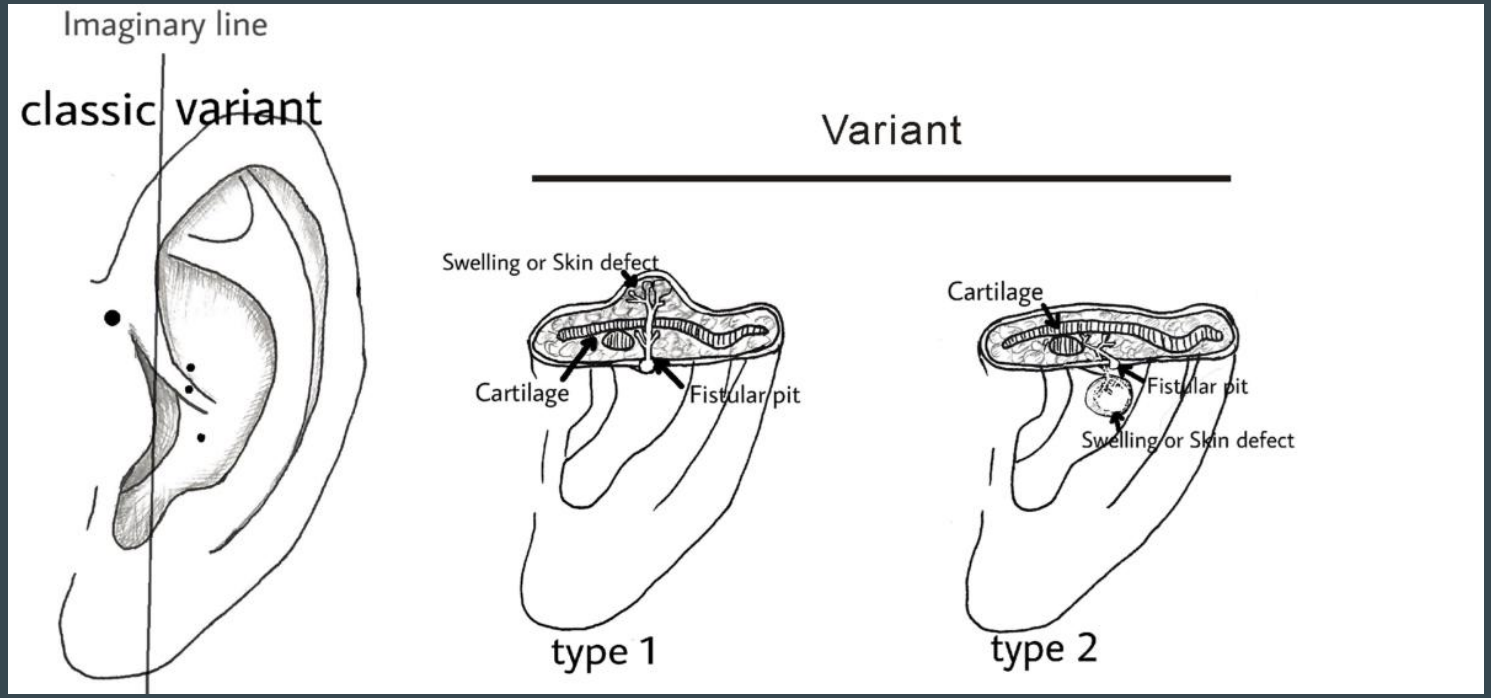

[2]Pang, J., Xiong, H., Liao, Q. et al. The diagnosis and treatment of a variant type of auricular sinus: postauricular sinus. Eur Arch Otorhinolaryngol 276, 1961–1967 (2019). https://doi.org/10.1007/s00405-019-05431-7

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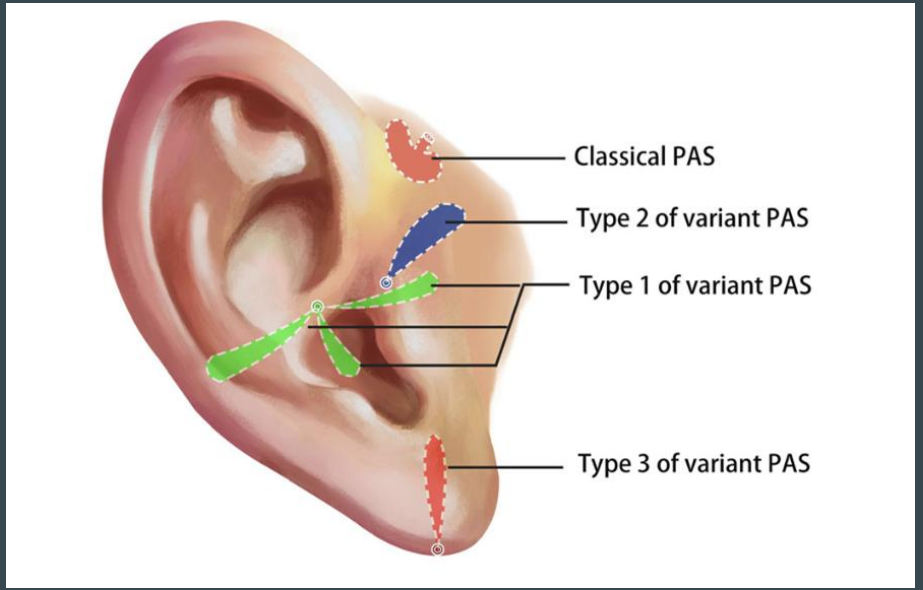
The definition in this paper

		Pit location
Classical type		Ant. to the limb of the asc. helix
Variant type	1	Ascending helix crus
	2	External auditory canal (EAC)
	3	Lobule



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- Criteria for defining classical vs. variant PAS are inconsistent
- Classification and characteristics of variant PAS remain unsolved
- Objective: To summarize experience with the diagnosis and treatment of varying types of PAS

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- Design: Retrospective review of clinical data
- Sampling: 177 p’ts underwent preauricular fistulectomy
    a. March 2015 – March 2020
    b. Classical group vs. Variant group
    c. Variant PAS accounted for 6.8% (12/177)

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- Classical type
  - 165 p’ts; 182 ears
- Variant type 1
  - 7 p’ts; 8 ears
- Variant type 2
  - 4 p’ts; 4 ears
- Variant type 3
  - 1 p’t; 1 ear

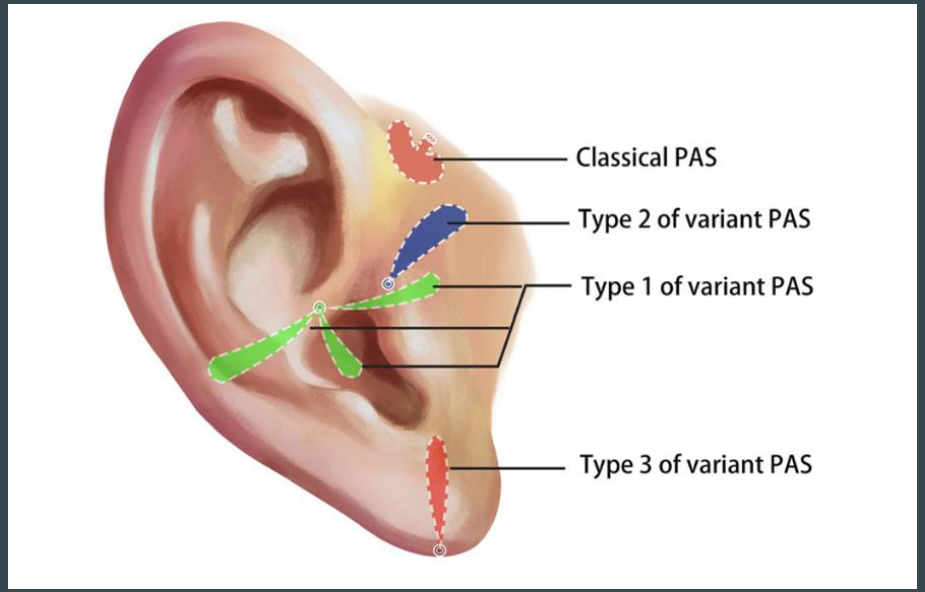

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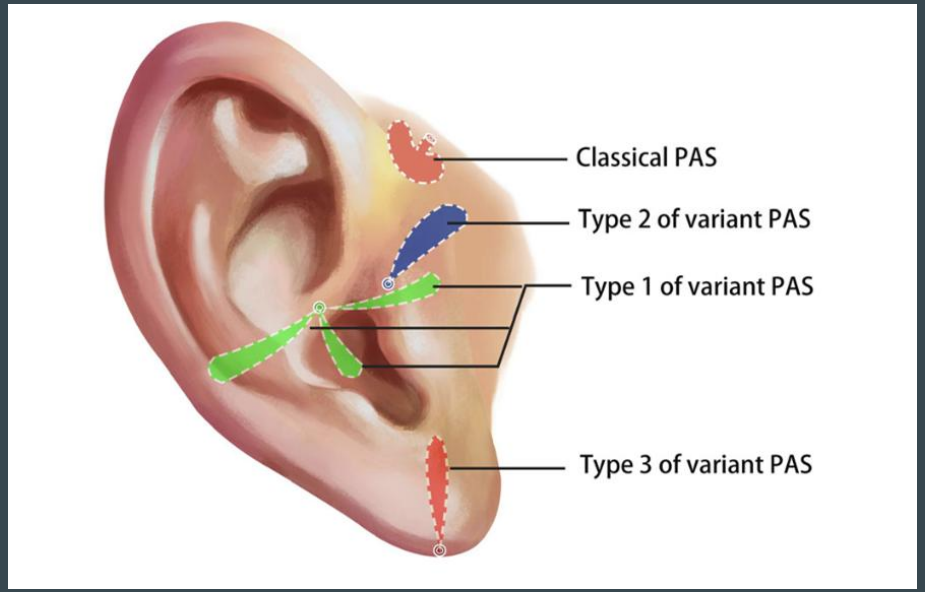
TABLE I.
Comparison of Clinical Presentations Between the Classical and Variant Groups of patients with Preauricular Sinuses.

Patients	Classical Group	Variant Group
Patient number (male: female)	165 (57:108)	12 (2:10)
Mean age (range) (years)	19.8 (1–86)	12.9 (3–40)
Ear number	182 (93.3%)	13 (6.7%)
Left/right/bilateral side ear number	73/75/17	7/4/1
Previous operation	14 (7.7%)	0
History of incision and drainage	81 (44.5%)	6 (46.2%)
Familial occurrence of a congenital periauricular sinus	60 (36.4%)	5 (38.5%)
Required postauricular incision	1	1
Fistula pit location	Anterior to the limb of ascending helix	Ascending helix crus/ EAC/lobule
Fistula tract location	Anterior to the limb of ascending helix	Ascending helix crus/ cavum concha /anterior to limb of ascending helix /lobule
Recurrence	3 (1.6%)	0 (0%)



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		%	Pit location	Fistula tract feature	Clinical presentation/ Infection sites
Classical type		93.2	Ant. to the limb of the asc. helix	Usually ant. to the limb of the asc. helix	Commonly preauricular area ant. to the pit
Variant type	1	4.1	Asc. helix crus	Tends to penetrate through the cartilage	Asc. helix crus, cavum concha, or post. to the auricle
	2	2.1	External auditory canal (EAC)	Adjacent to the cartilage of the asc. helix and tragus	Painful swelling ant. to the asc. helix
	3	0.5	Lobule	Adjacent to the auricle cartilage	Lobule

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		Fistula tract feature	Clinical presentation/ Infection sites	Management
Classical type		Usually ant. to the limb of the asc. helix	Commonly preauricular area ant. to the pit	Standard preauricular fistulectomy
Variant type	1	Tends to penetrate through the cartilage	Asc. helix crus, cavum concha, or post. to the auricle	Incision/ excision of cartilage for entirely removal of tract Higher surgical complexity
	2	Adjacent to the cartilage of the asc. helix and tragus	Painful swelling ant. to the asc. helix	Otoscopy for dx, DDx w/ First Branchial Cleft Cyst
	3	Adjacent to the auricle cartilage	Lobule	Adjacent dissection Lower surgical complexity

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- Misdiagnosis alert: Common for Type 2 (DDx w/ 1st branchial cleft cyst)
  a. Ant. swelling w/o visible pit → Carefully examine the EAC
- Management: Preauricular fistulectomy
  a. Meticulous dissection + Complete removal → Avoid recurrence

Background/ Method/ Result/ Discussion/ Take home message

- Surgical technique
  a. Microscopic visualization
     i. Tracking fistula by the appearance of the epithelium
     ii. Do not recommend using methylene blue or probes
  b. Preserve maximum auricular cartilage and perichondrium
     i. For varient type 1&2

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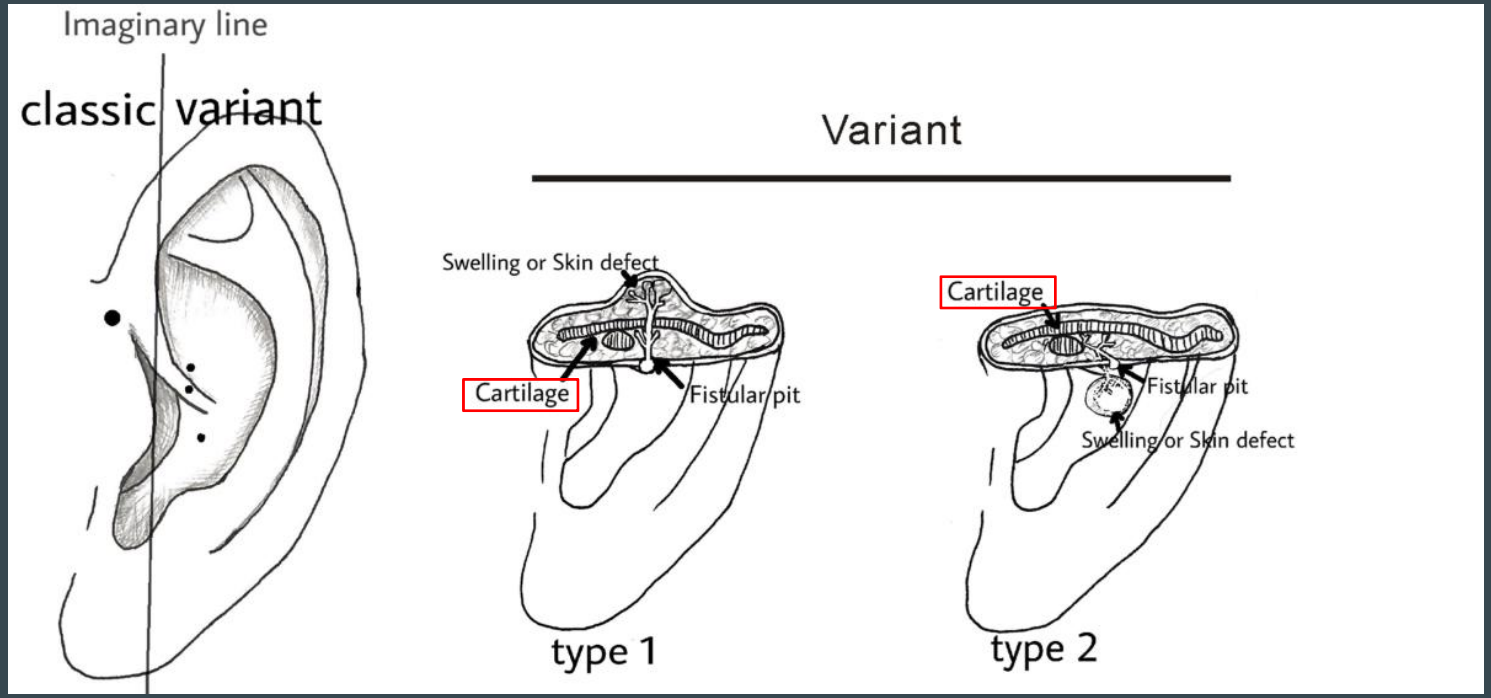

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Background/ Method/ Result/ Discussion/ Take home message

Surgical procedure for Variant type I




[3]Liu, L., Zhang, H., Dou, X., Zhao, X., & Fan, M. (2025). Preliminary study on classification and treatment of type I variant preauricular fistula. American journal of otolaryngology, 46(5), 104709. https://doi.org/10.1016/j.amjoto.2025.104709

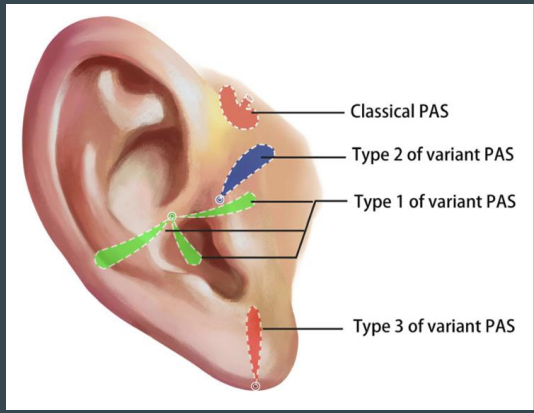
Background/ Method/ Result/ Discussion/ Take home message

- Classical and Variant PAS: Same disease w/ different manifestations
- Classification by pit location (Types 1, 2, 3) is clinically useful
  a. Type 1: Tracts commonly penetrate the cartilage
  b. Type 2: Tracts are usually near the asc. helix and tragus cartilage
- Swelling locations vary by type

Background/ Method/ Result/ Discussion/ Take home message

Pit location check

- Anterior to the limb of the asceding helix
  - → Classical type
  - → Standard preauricular fistulectomy



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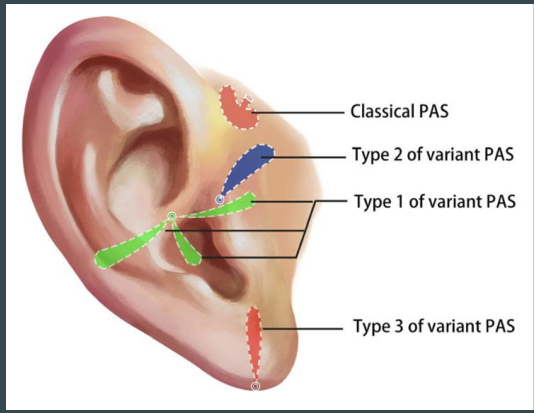
Pit location check



- Other auricular regions → Variant type
  a. Asc. helix crus → Type 1

     → Incision/ excision cartilage (Higher risk)

  a. External auditory canal (might be hidden)→ Type 2

     → DDx with FBCC

  a. Lobule → Type 3 → Very rare (Lower risk)

THANK YOU

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TABLE II.
Clinical Manifestations of 12 Patients (13 ears) with Variant Preauricular Sinuses.

NO.	Gender	Age (Years)	Pit Location	Pit Number	Infection Location	Tract and Cartilage	History of Incision and drainage	History of Surgery	Recurrence	Follow-up Time (Month)
1	Male	19	Bilateral ascending helix crus/ anterior to left limb of ascending helix	2/1	Right ascending helix crus	Penetrated annular cartilage defect	No	No	No	12
2	Male	40	Left ascending helix crus	1	Left ascending helix crus	Penetrated annular cartilage defect	No	No	No	36.5
3	Female	3	Left ascending helix crus/ anterior to right limb of ascending helix	1/1	Left ascending helix crus	Penetrated annular cartilage defect	No	No	No	39
4	Female	5	Right ascending helix crus	1	Right ascending helix crus	Penetrated annular cartilage defect	No	No	No	39
5	Female	5	Right ascending helix crus	1	Right cavum concha	Penetrated annular cartilage defect	Yes	No	No	11
6	Female	12	Left ascending helix crus	1	Posterior to left auricle	Penetrated non-annular cartilage defect	Yes	No	No	15
7	Female	30	Left ascending helix crus	1	Left cavum concha	Adhered	No	No	No	26
8	Female	3	Left EAC	2	Anterior to limb of ascending helix	Adjacent	Yes	No	No	26
9	Female	4	Left EAC	1	Anterior to limb of ascending helix	Adjacent	Yes	No	No	20
10	Female	7	Right EAC	2	Anterior to limb of ascending helix	Adjacent	Yes	No	No	24
11	Female	18	Left EAC	1	Anterior to limb of ascending helix	Adjacent	Yes	No	No	17
12	Female	9	Right lobule	1	Lobule	Adjacent	No	No	No	32