

Introduction

The infracochlear cell tract is a highly variable anatomical space that embryologically develops between the fustis and the finiculus bounded superiorly by the cochlea, anteriorly by the ICA, inferiorly by the jugular bulb and posteriorly by the facial nerve.

Aim of the Work

The aim of this study was to quantitatively and qualitatively assess the radiological and surgical anatomy of the infracochlear tunnel in a sample of the study population at the department of otorhinolaryngology and radiodiagnosis in Alexandria University Hospital, Egypt.

Subjects and Methods

Cross sectional descriptive study on 50 patients, 41 HRCT examined bilaterally and 6 cardavers. The ICT was present in 52.17% of the study population and 50% of those from the same demographic region. Anatomically type B tunnel was the most prevalent 28/56 (50%), type C were 20/56 (35.71%), and 8/56 (14.29%) had type A tunnel. Radiologically ICT was detected in 43.9%. Type 1 was most prominent and constituted 46/82 (56.10%), 24/82 (29.72%) had a type 2 tunnel, and type 3 and 4 had equal distribution 6/82 (7.32%). There ICT was further measured in its AP and vertical diameters, the vertical diameter was found to be larger (range 0.28-4.09mm) than the AP diameter (range 0.26-3.13mm) in all the groups which was statistically significant. The pairwise comparison also revealed that the diameter was statistically significantly higher in radiography compared to microscopy and cadaveric groups ($p<.001$). The narrowest diameter of the ICT was also observed in its course to range from 0.61-2.85mm. In those with an ICT detected, 41.67% had a single cell while 58.33% had a cell tract.

PA pneumatization was observed in 16/82 radiology cases of which all had an ICT present.

Results

Table 1

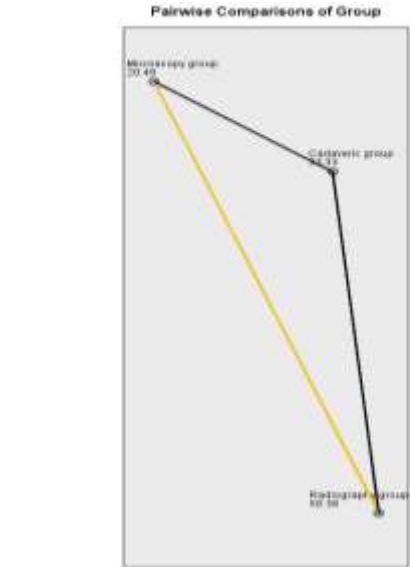
Group	Total (n=56)	Classification		
		C	B	A
Microscopy Group				
- n	50	20	25	5
- % within Group	89.29%	40.00%	50.00%	10.00%
- % within Classification		100.00%	89.29%	62.50%
Cadaveric Group				
- n	6	0	3	3
- % within Group	10.71%	0.00%	50.00%	50.00%
- % within Classification		0.00%	10.71%	37.50%
Total				
- n	56	20	28	8
- %	100.00%	35.71%	50.00%	14.29%

Table 2

Radiography group	Total (n=56)	Radiology Qualitative			
		No Tunnel	Small tunnel	Large tunnel Not communicating with PA	Large tunnel communicating with PA
Microscopy Group					
- n	82	46	24	6	6
- %	100.00%	56.10%	29.27%	7.32%	7.32%

Table 3: Cell Type of the detected ICT in the Radiographic Group

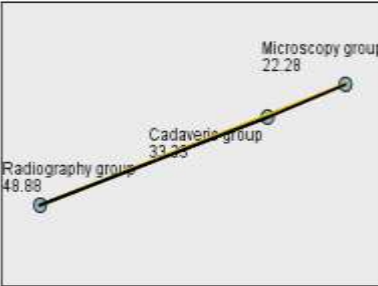
Radiography group	Total (n=36)	Cell Type	
		Single-cell (n=15)	Cell tract (n=21)
- N	36	15	21
- %	100.00%	41.67%	58.33%



Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
Microscopy group-Cadaveric group	-12.050	9.359	-1.281	.238	.713
Microscopy group-Radiography group	-26.592	5.174	-5.140	.000	.000
Cadaveric group-Radiography group	15.542	9.228	1.684	.092	.276

Each node shows the sample average rank of Group.

Pairwise Comparisons of Group



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Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Conclusion

Studies on the ICT are highly valuable in the future of otological surgery.