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Is the width of the labyrinthine portion of the fallopian tube implicated in the pathophysiology of Bell's palsy?: a prospective clinical study using computed tomography.

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Source

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Abstract

OBJECTIVES/HYPOTHESIS:

The pathogenetic mechanisms underlying Bell's palsy remain obscure, despite the extensive relevant research. Magnetic resonance imaging (MRI) studies



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have strongly indicated that facial nerve edema cannot be regarded as the sole etiologic factor, because it might persist long after full clinical recovery, or might be demonstrated in the clinically unaffected side or healthy controls. The aim of this study was to investigate the hypothesis that a narrow facial canal might be implicated in the pathophysiology of Bell's palsy.

STUDY DESIGN:

Prospective clinical study.

METHODS:

A high-resolution computerized tomography of the temporal bone with 1-mm thick contiguous axial sections was performed in 25 patients with unilateral Bell's palsy. The width of the fallopian tube was measured at the meatal foramen and the middle part of its labyrinthine segment.

RESULTS:

When using paired Student t tests, the measured width of the affected ear was found significantly smaller than that of the unaffected side, both at the meatal foramen ($P = .007$) and at the middle part of the labyrinthine segment ($P = .03$).

CONCLUSIONS:

Bell's palsy seems to usually coincide with the narrower fallopian tube of the patient. This anatomical detail, supported by previous MRI studies, seems to indicate that an asymmetry between the right and left fallopian tube might be a necessary pathogenetic mechanism for the development of a facial nerve edema into Bell's palsy in the narrower fallopian canal. More studies on large healthy populations are needed before a notable facial canal asymmetry is linked to a higher risk for developing Bell's palsy.