Role of squamosal suture as a consistent landmark for middle fossa approach craniotomy: an anatomical study.

Kenan Alkhalili, Mohammed Tantawy, Mohab M Nageeb, Mohamed A Ragaee, Gasser H Alshyal, Dunbar S Alcindor, Douglas A Chen, KM Aziz

Abstract:

Objective To establish a consistent surface bony landmark for a middle fossa approach (MFA) lateral craniotomy represented by the squamosal suture (SS). Methods In 60 dried skulls, we assessed the relation between the SS and the external auditory canal (EAC). The lateral portion of the middle cranial fossa floor was also assessed for a possible relation with the anteroposterior diameter (APD) of the squama temporalis (ST). Clinically, we applied our findings on the SS in MFA for different lesions. Results A vertical line at the EAC divided the ST into the anterior part constituting 61% of the APD (i.e., two thirds) and the posterior part forming 39% (i.e., one third). The average ST height was 35.92 mm. The SS posterior limit at the supramastoid crest was located just anterior to the external projection of the petrous ridge in 35 skulls (58%) and exactly corresponded to it in 25 skulls (42%). The APD of the ST equals on average 97% of the APD of the lateral middle cranial fossa. Optimum exposure of the middle fossa was obtained without any further craniotomy extension. Conclusion The SS serves as a consistent natural surface bony landmark for MFA. Optimum craniotomy, two thirds anterior to the EAC and one third posterior, is obtained following SS as a landmark.

Published In: