

Anatomic position of the asterion in Kenyans for posterolateral surgical approaches to cranial cavity.

Abstract:

The asterion, defined as the junction between lambdoid, parietomastoid, and occipitomastoid sutures, has been used as a landmark in posterolateral approaches to the posterior fossa. Its reliability however has been put into question due to its population-specific variability in position, using external palpable landmarks and its relation to the transverse-sigmoid sinus complex. This study aimed at determining the anatomic position of the asterion in a Kenyan population. Measurements from the asterion to the root of zygoma and the tip of mastoid process, respectively were taken on both left and right sides of 90 (51 male, 39 female) human skulls. The relation of the asterion to the transverse-sigmoid sinus junction was also determined. The distances on the right and left sides from the asterion to the root of the zygoma were 58.85 +/- 2.50 mm and 58.44 +/- 2.12 mm, respectively. The asterion was 47.89 +/- 3.72 mm above the tip of mastoid process on the right side and 47.62 +/- 2.87 mm on the left side. This point was significantly higher in males (48.36 +/- 2.72 mm) than in females (46.62 +/- 3.37 mm) with a P-value of 0.041. Regarding its position from the transverse-sigmoid sinus junction, it was at the junction in 72 cases, below it in 17 cases (average 3.68 mm) and only one case had the asterion above this junction (2.57 mm). The asterion therefore can reliably be ascertained using the parameters from the root of the zygoma and the tip of the mastoid process. The safest approach would be posteroinferior to the asterion so as to avoid lacerating the transverse-sigmoid sinus complex.