

## Anatomical Note

### A tubercle at the anterior margin of the foramen magnum

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There is very little in the literature about the tubercle that may occur at the anterior margin of the foramen magnum. Gardner, Gray & O'Rahilly (1960), Breathnach (1965), Hamilton (1976), Last (1978), Hollinshead (1982), O'Rahilly (1983) and Hollinshead & Rosse (1985) do not mention it at all.

A total of 422 adult skulls of either sex were studied for the presence of the tubercle at the anterior margin of the foramen magnum. The size, shape and direction of the tubercle were noted.

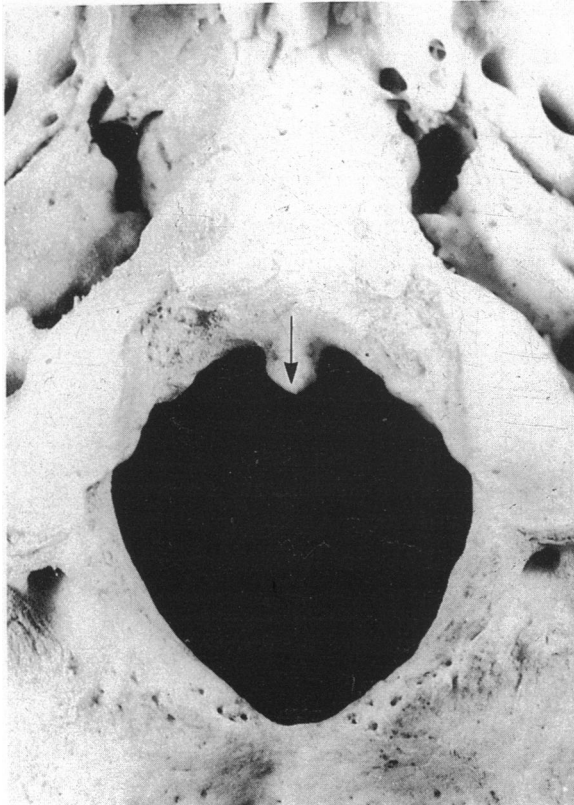


Fig. 1. A long pyramidal projection (arrow) at the anterior border of the foramen magnum.

Out of the 422 skulls that were examined, in 22 skulls the projection took the form of a tubercle measuring 0.5 mm to 1.5 mm in length, while in 32 skulls the tubercle length was 2.0 mm to 2.5 mm. In 2 skulls the projection was pyramidal in shape, measuring 4.0 mm in length (Fig. 1). In 5 skulls it was triangular in outline with the base free and measuring 3 mm in length. In 3 skulls the anterior margin showed a large projection directed posteriorly with a proximal broad base. In the remaining 358 skulls no projection was observed. A tubercle was thus present in 15% of skulls examined.

Romanes (1964) commented that the small bony tubercle on the anterior margin of the foramen magnum indicates the position of the apical ligament of the dens. Romanes (1964) and Basmajian (1972) described the presence of a third occipital condyle that projects from the anterior border of the foramen magnum to articulate with the dens of the axis. The direction of such a condyle is not mentioned. In this study the projections observed were strictly from the anterior margin and projected backwards. Observations concerning the different sizes and shapes of these projections have hitherto not been reported. Such large projections directed posteriorly into the foramen magnum are, perhaps, liable to injure the pyramidal fibres in extreme flexion of the head.

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