Double straight sinus
Report of six cases

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The straight sinus was examined in 43 human cadavers. In 13.95% of the cadavers the straight sinus was double, being either median in position, that is, one was superior and the other inferior (9.3%), or paramedian, that is, both lay side by side on either side of the midline at the junction of the falx cerebri with the tentorium cerebelli (4.65%).

KEY WORDS: intracranial venous sinuses • straight sinus

In the literature available on the anatomy of intracranial venous sinuses, almost every investigator has invariably mentioned a single straight venous sinus confined to the two layers of the dura mater between the attachment of the falx cerebri to the tentorium cerebelli. We are reporting for the first time six cases of double straight sinus which were observed during the study of intracranial venous sinuses in human cadavers.

Material and Method
We examined the dura mater of the posterior cranial fossa in 43 adult cadavers. Methylene blue was injected through the confluence of sinuses to visualize the extent and communications of the straight sinus; the sinuses were then dissected.

Results
The straight sinus was found to be double in six out of 43 cadavers (13.95%). The position of the sinus was either median or paramedian (Fig. 1).

In four cases (9.3%) the sinuses were median; one was superior and the other inferior. In all cases of double median straight sinuses, the superior one was the continuation of the inferior sagittal sinus and the inferior of the great cerebral vein. In three cadavers both the median superior and the inferior straight sinuses drained into the left transverse sinus. In one the superior median straight sinus drained into the right transverse sinus and the inferior median straight sinus into the left transverse sinus.

In two cases (4.65%) both sinuses were paramedian, lying on either side of the midline. When the double straight sinuses were paramedian, the left was the continuation of the great cerebral vein and the right the continuation of the inferior sagittal sinus. In both cadavers the right paramedian straight sinus terminated in the right
Double straight sinus

FIG. 1. Diagrams illustrating the variations in the termination of the double straight sinus. Upper Row: Paramedian position. Center Row: Median position. Lower Row: Median position. RT = right transverse sinus; LT = left transverse sinus; RS = right straight sinus; LS = left straight sinus; IS = inferior straight sinus; SS = superior straight sinus; SSa = superior sagittal sinus.
transverse sinus and the left paramedian straight sinus in the left transverse sinus.

Discussion

The human dural venous sinuses and their anomalies have been described by a number of workers.1-8,8,9 No report of double straight venous sinuses could be found.

According to Streeter,7 when the cerebral hemisphere increases in size, the mesenchymatous tissue of the dura mater is compressed on the midbrain and the hindbrain in the form of folds. As the folds are formed, the conjoined anterior and middle venous plexuses fuse with each other to form the superior sagittal, inferior sagittal, and the straight sinuses. Thus, there may be numerous variations in size, shape, number, and mode of formation and termination of the cranial venous sinuses. These variations may become clinically important as they produce neurological symptoms or hazards to surgery involving the dura.

References


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