PARASAGITTAL MENINGIOMAS OF THE LONGITUDINAL SINUS AND FALX

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The neurological and surgical aspects of meningiomas of the falx and parasagittal region have been described with such clarity and detail, notably by Cushing and Eisenhardt (58 cases), Elsberg (25), and more recently by Grant (128), Petit-Dutaillis and Pertuiset (12), Hoessly and Olivecrona (280), and Simpson (Cairns' series of 90) that there is no need to discuss further examples of these interesting tumours in a similar general way. Our purpose in writing this account of a small series of 25 personally treated and carefully followed cases is to record additional statistics on their clinical course and to stress certain points that have not been emphasized in these outstanding reports nor by others to our knowledge. It has been possible to follow 20 of our patients for periods ranging from 3 to 20 years after their initial surgery. One succumbed at the first operation, 1 has been lost track of, and 3 others have been operated upon only within the last 20 months.

Especial features that can be further discussed with profit include the following:

1) The low rate of postoperative mortality and morbidity made possible by modern surgical techniques.
2) The probability of prolonged useful survival.
3) The predominant tendency of meningeal tumours in this region to induce epileptic seizures and their response to surgical removal of the neoplastic focus.
4) Electroencephalographic findings before and after surgery.
5) Plans for further improvement in surgical technique.

The meningiomas in this series varied in size up to 250 gm. Although some recurred a number of times, only 1 with a relatively early recurrence showed histological evidence of malignant change. Three were of the hyperostosing variety, but none developed massive thickening of the cranial vault.

1. Postoperative Mortality and Morbidity Rates. In view of the previous exhaustive statistics on surgical mortality, this requires no comments beyond the fact that its rate continues to fall. Available figures on this score reported by Cushing and Eisenhardt, Grant, Petit-Dutaillis and Pertui-
set\textsuperscript{15,16} and Hoessly and Olivecrona\textsuperscript{7} are compared with the present series in Table 1. Nothing can speak more eloquently for the masterly quality of Cushing’s technique than the fact that he was able to carry such a large proportion of his patients through these difficult operations over the years when transfusion was seldom used. In addition one must remember he had the advantages of electrocoagulation only during his last 5 years and that Gelfoam, thrombin solution, and hypotensive drugs have all been developed since his death. Grant\textsuperscript{6} has recently given an excellent account of the steps in surgical resection of these difficult tumours that are of vital importance in lowering operative mortality and postoperative complications. To-day when the brain is tense or the tumour is unusually vascular, surgical removal can be carried out with increased safety under hypothermia. Sedzimir and Dundee\textsuperscript{18} have stressed its advantages and we have found it to be of inestimable value in removing a dumbbell-shaped tumour arising from the deep central portion of the falk (see below). Of our 2 deaths the first was a true surgical casualty caused by excessive loss of blood; the second (in Patient 8) re-

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline
\textbf{Series} & \multicolumn{3}{c|}{\textbf{Tumour Attachment}} & \multicolumn{2}{c|}{\textbf{Total Hospital Mortality}} \\
\hline & \textbf{To Longitudinal Sinus} & \textbf{To Falx} & & & \\
 & \textbf{Ant.} & \textbf{Mid.} & \textbf{Post.} & \textbf{Per Case} & \textbf{Per Operation} \\
 & \textbf{Third} & \textbf{Third} & \textbf{Third} & & \\
\hline
Cushing & Eisenhardt\textsuperscript{*} & & & & & \\
Deaths & 2 & 4 & 0 & 4 & 10 \\
No. of patients & 13 & 32 & 6 & 7 & 58 \\
Mortality & 15.4\% & 12.5\% & 0\% & 57\% & 17.2\% & 8.8\% \\
\hline
Hoessly & Olivecrona\textsuperscript{7} & & & & & \\
Deaths & 3 & 14 & 3 & 14 & \\
No. of patients & 56 & 109 & 81 & 80 & \\
Mortality & 5.4\% & 12.8\% & 9.7\% & 17.5\% & 12.3\% & 10.3\% \\
\hline
Present series & & & & & \\
Deaths & 0 & 2 & 0 & 0 & 2 \\
No. of patients & 6 & 13 & 4 & 2 & 25 \\
Mortality & 0\% & 15.4\% & 0\% & 0\% & 8\% & 4.4\% \\
\hline
\end{tabular}
\caption{Mortality statistics: Relation to position of parasagittal meningiomas}
\end{table}