A CERVICAL AND A LUMBAR PILONidal SINUS COMMUNICATING WITH INTRASPINAL DERMOIDS

REPORT OF 2 CASES AND REVIEW OF THE LITERATURE

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Pilonidal sinuses, also called congenital dermal sinuses, are among the most common congenital defects of the midline in the lumbar region, but occasionally may be present at higher levels. It is not generally appreciated, however, that sinuses of this kind, instead of being harmless blind tracts, may in rare instances communicate directly with the subdural or subarachnoid space at any level of the spinal column, and still more rarely, may terminate in an intraspinal tumor. Knowledge of this fact in patients having spinal cord symptoms in the presence of a pilonidal sinus, particularly over the higher spinal segments, should lead to earlier surgery with less disability in a group of patients whose ultimate prognosis should be excellent if the tumor is removed before serious cord damage has taken place.

The present communication serves to put on record two examples of these uncommon intradural dermoids as well as to review the literature concerned with these tumors. Comprehensive reviews on the subject of spinal dermoids are to be found in papers by Fraser,16 Gross,18 Bradford,6 Boldrey and Elvidge,4 List28 and Craig.11 We wish to add our own case here, and one other case, histologically verified and previously unreported, with which we are familiar, thanks to Dr. Leonard T. Furlow. This brings the total number of spinal dermoids and epidermoids in the literature to 61 (Table 1). We have reviewed all the reported cases to which references are available, but have quoted freely from Boldrey and Elvidge, Craig, and Bradford on cases unavailable to us. The source of all cases in the tables is given in the bibliography. Rasmussen, Kernohan and Adson37 mention 2 cases, Steinke43 mentions 2, and Elsberg (1941) mentions 4 of his own, none of which is included here, since no details are given and it cannot be determined which of these has been previously reported.

NOMENCLATURE

The nomenclature of these tumors has passed through various phases which we shall summarize briefly for the sake of clarity. Greater detail on this score can be found in the papers of Bostroem,5 Bailey,3 Horrax,22 and in the thorough studies by Critchley and Ferguson.12

Cruveuilhier first introduced the term "tumeur perlée" in 1829 when he

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reported 2 cases. In 1838, Johannes Mueller added 2 more cases and gave them the specific name “cholesteatomas” because of the cholesterol crystals he found. In 1855 Virchow, in his studies “Ueber Perlgeschwülste” advocated a return to Cruveilhier’s terminology because all such tumors did not contain cholesterol. Bostroem\(^2\) introduced the name “pial dermoids and epidermoids, and dural dermoids,” based on thorough anatomical studies of the genesis of these tumors. This classic paper did not gain full recognition, as far as the use of these terms was concerned, for many years. Bailey\(^5\) advocated a return to Cruveilhier’s “tumeur perlée,” as it has the advantage of being descriptive and non-committal. He also did not accept Bostroem’s work as showing conclusively that they were epidermal in nature or pial in origin. In 1922, one of us (G. H.)\(^22\) suggested that Bostroem’s names were too cumbersome, and that the use of the collective descriptive name “cholesteatoma” would be preferable. By designating them as “meningeal,” no confusion would exist with those tumors arising from rests in the pituitary region, or with those composed of detritus arising from chronic middle ear disease. By the expedient of calling them “hair-containing” and “non-hair-containing,” the dermoids and epidermoids could be differentiated.

Harvey and Burr\(^30\) showed that the views of His and Kölliker, who maintained that the meninges had a common derivation from the mesoderm, were incorrect. The former authors proved that certain ectodermal elements derived from the neural crest helped to form the mesenchyme, and took part in the formation of the pia and arachnoid. This immediately made it clear that dermoid tumors could arise as “inclusions” in ectodermal tissue. Ingraham and Bailey\(^24\) used the terms “teratoma” and “teratoid” to describe all these tumors, and did not differentiate the dermoids from the teratoids. Hosoi\(^20\) felt that the 10 spinal “teratomas” he reviewed were bidermal only, so he called them teratoid. Since then, Bucy and Buchanan\(^7\) essentially agreed with Hosoi, but Masten\(^32\) reported a case which she felt was truly tridermal in origin, and quoted a case of Voss (1934), as well as the case of Puusepp (1938), which also seem authentically tridermal. In many of these complex tumors, derivatives of one or two germ layers tend to overgrow the others and final analysis of the total number of germ layers present may be exceedingly difficult. The endodermal derivatives seem to be most difficult to identify, and are subject to considerable controversy.

In this paper we shall use the following classification.

**Epidermoid:** Tumors having only epidermal tissue and its debris, and definitely *lacking* the dermal structures. They may be traumatic or embryonic in origin, and produce characteristic growths such as the so-called cholesteatomas or pearly tumors.

**Simple dermoid:** Tumors consisting of epidermis, dermis and dermal glands. They may also have a pearly sheen, but as a rule not so striking as that of the epidermoids.