Maternalizing the meninges: A pregnant Arabic legacy

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A few medical terms were coined in poetic reverence: *Serum,* is rooted in *(sarve iti) sarita,* a Sanskrit homage to the serum that flowed out from under a superficial hematoma like a sarita or a river. *Vidita-‘the mother of all saints’-is traceable to a whom made by the petals of a flower.

*Meninx* connoting a membrane does poor justice to the veritable womb that the maters make, all around the CNA and well-beyond in all directions. The maternal status has rightly been accorded to uteruses for bearing and bestowing a baby, and hence *metrium, parametrium, metrorrhagia* and so on. Uterine inflammation is metritis, but meningeal inflammation has never been materitis, nor has meningoeal been substituted by maternal. The Arabic reverie gets aborted the moment the misnomer been materitis, nor has meningeal been substituted by maternal. In a manner of speaking, we all carry 5 mothers, 3 maternal and 2 material, all having been derived epigenetically from the neuroectoderm that forms in the dorsal midline of the embryonic plate, that soon dips to form the maternalizing the meninges: A pregnant Arabic legacy

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neural groove, that sinking further, turns into the neural tube that delves deeper to allow the cutaneous ectoderm to close over.

Much as the developing embryo fashions for itself, out of its own matter, its fluid-cushioned nest in the form of amniotic sac (rather flatly called the fetal membrane), the neural tube while busy forming the CNA crowns itself dorsally to form the neural crest whose versatility and reach closely compete with those of the CNA and all its offshoots called the nerves. While the CNA may be assigned the pride of place, the task of housing, protecting, proping, buoying, vascularizing, insulating the whole CNA and its ramifications is done by the neural crest cells, with the panache and perfection of a mother or a set thereof.

Dura mater literally, the hard mother is coextensive with the cranio-spinal axis for she houses the latter by splitting to form various coeloms each of which spawns and lodges within it the cranial/spinal bones, a sequence that explains why the same dura forms peristeum on the outer side and endosteum on the inner. The dura fashions various chambers and partitions to nestle the CNA, hence meriting the appellation nest mother whose precise projections into the cranium create the props falx cerebri ‘et cerebelli’ and a floor for the occipital lobes, wrongly called the tentorium cerebelli. The occipital hammock, made by the nest mater may be Latinically called the *floorum occipiti.* The nest mater, fashions numerous vascular coelomic spaces to accommodate the low pressure venous sinuses (*venae magna*) to render them patent under pressure.

The nest mater assumes a capacity consistent with the size of its contained CNA, and then fashions the bones to anchor itself afar from its contents. Eucephaly, anencephaly, anencephaly of various shapes and/or sizes, meningoeels (rightly materoeels) are no bony defects, but a consequence of the decisions taken by the maters and the CNA. Ardrey aphorized that normality is a range, and no fixed, arbitrary average. All the aforelisted ‘normal’ ‘abnormal’ variations are but an integral part of widely encompassing normality. It is of significance that an oligocephalic (1000 ml) brain of Anatole France exercised Voltairean genius, and a brain of 2000 ml may be all dumbwit. Normality and abnormality- as yet undefined- usually reside in the eyes of the beholder.

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The term arachnoid or spider mater is poorly evocative of the stellar role it plays in buoying up the whole CNA through its contained fluid, that having the same specific gravity as the neural tissue, renders the CNA essentially weightless, much as the amniotic fluid does to the fetus. A vital outcome of the buoyancy accorded to the CNA is to steer away the wider part of the medulla from pressing the vertebral vessels against the foramen magnum, a fact tragically verifiable uncommonly by instant death from medullary coning on sudden release of high-pressure cerebrospinal fluid (CSF) to the exterior. How about calling this so-called arachnoid meninge as the buoy mater, containing buoyaqua, limitedly called CSF. The buoy mater, closely abutting on the nest mater, extends well beyond the CNA, a blessing that allows the safety of ‘CSF punctures’ high, and low. The buoy mater sweeps past the changing contours of the CNA, thus allowing many a cistern to protect vital areas with the buoaqua filling up the various sulci so as to cushion all the gyri. The buoaqua space provides a fluid sleeve to all nerves going in and out of the craniospinal axis. The free communication between the buoy mater buoaqua and the buoaqua in the interior of the CNA provides an effective adjustment of pressures within and around the CNA. The arachnoidal septae criss-crossing the interior of the buoy mater create freely intercommunicating cavernous spaces providing fluid support to the vessels traveling to and fro. The maternal role of the buoy mater is a fascinating illustration of the functional necessities being the mother of structural innovations.

The pia or pious mater, for long, was taken as one with the buoy mater. It is a tunic that closely clings to the entire CNA, faithfully following it through every crevice small and large. It is designed to allow the CNA vasculature to branch and plexicate itself in the pia mater so as to occupy the least space in the substance of the CNA and to equitably vascularize it all over. The pia mater is the vas mater, phonetically pretty close to vas deferens. It should not be difficult to replace the terms meningeal, meningitis, meningocele, meningioma, pachymeninges, leptomeninges by the more appropriate maternal, materistic, materocele, materoma, padiymater; and leptomater. The transition is not difficult if one recalls the many a maternal terms used for and about the uterus. Likewise, the adjectival terms nestal, buoyal, buoyaquatic, and vasal would sound as felicitous as the counter terms they hope to replace.

Put succinctly, the nest mater nestles, the buoy mater through its buoaqua buoys, and the vas mater vascularizes the entire cerebrospinal axis and its ramifications. The new terms are euphonious, evocative and valid epigenetically. The Arabic legacy that christens them as mothers is pregnant with reverential understanding not bereft of rich scientific content.

Special Issue of Neurology India: Fungal infections of the nervous system

A special issue on ‘Fungal Infections of the Nervous System’ will be published in May 2007. The issue will consist of state of the art review articles from the experts in the subject and original research papers along with case reports pertaining to fungal infections. Original research papers and interesting and unique case reports on this subject are invited. Any article submitted before December 2006 may get a chance to be included in the issue. Articles can be submitted from www.journalonweb.com.

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