

# Bregmatic dermoid cyst in a patent anterior fontanelle

Sir,  
 Bregmatic dermoid cyst (BDC), a rare congenital inclusion cyst of the scalp<sup>[1]</sup> first described in 1971 was considered a disease of African children.<sup>[1]</sup> Subsequent reports, in various races, have negated this racial proclivity.<sup>[1]</sup> We reported two Indian children with BDC.<sup>[1]</sup> There have been a few other reports of BDC in patients of Indian origin, but all in children.<sup>[1,2]</sup> BDC is rarely reported in the adult patient.<sup>[1,3,4]</sup> This is the first report of an Indian adult patient presenting with a BDC. Associated scalloping of the outer table of the calvarium has been reported,<sup>[3]</sup> but never a patent anterior fontanelle (AF). BDCs should be operated by neurosurgeons in view of the varied neurological differential diagnosis.<sup>[1]</sup> A 20-year old male presented with history of a scalp swelling



**Figure 1:** (a, b) Demonstrate the bregmatic dermoid cyst. (c) An intra-operative image delineating the patent anterior fontanelle (black arrow). (d) The dermoid cyst excised *in toto*

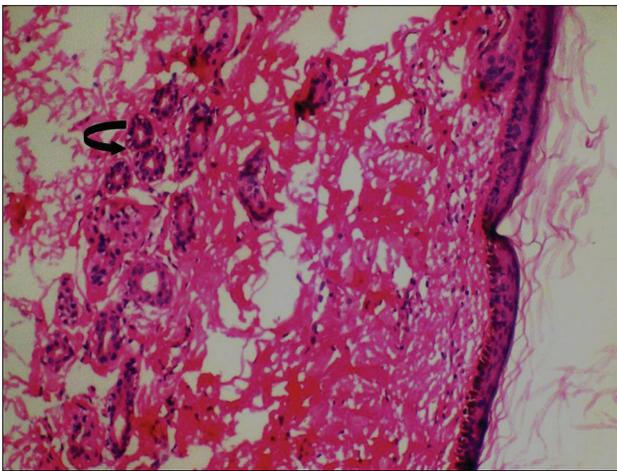


**Figure 2:** (a) Plain lateral skull X-ray. (b) Coronal CT demonstrating the patent anterior fontanelle. (c) Mid-sagittal T1W image and (d) Coronal T2W images demonstrating the location of the BDC. In both images the signal intensity of the contents is identical to CSF. (e and f) Relation of the BDC to the superior sagittal sinus

**Table 1: Review of literature of adult cases of BDC and reports from the Indian subcontinent**

Reference	Year	Age of patient (years)	No. of patients	Race/Country	M:F
Adeloye A, Odeku EL <sup>[1]</sup>	1971	18	1/17	African/Nigeria	1:0
Mohanty <i>et al.</i> <sup>[1]</sup>	1978	N.A*	1	India	NA
Ojikutu NA <i>et al.</i> <sup>[3]</sup>	1980	28, 32	2	African/Nigeria	1:1
Oliveira HA <i>et al.</i> <sup>[3]</sup>	1989	24	1	Brazil	NA
Hubault-Marcade P <i>et al.</i>	1991	32	1	France	NA
Peter JC <i>et al.</i> <sup>[1]</sup>	1992	N.A*	2	Indian origin	NA
Agarwal A <i>et al.</i>	2007	7 months <sup>#</sup>	1		F
Castro RA <i>et al.</i> <sup>[3]</sup>	2007	23	1	Brazil	1:0
Dadlani <i>et al.</i> <sup>[1]</sup>	2012	6 months* 8 months*	2	M/F	4
Dadlani <i>et al.</i> (present case) <sup>^ [7]</sup>	2012	20	1	India	1:0
Agarwal <i>et al.</i> <sup>[8]</sup>	2011	3 months*	1	M	5

NA: Not available, \*Pediatric population, <sup>#</sup>Epidermoid cyst from Nepal, <sup>^</sup>Only adult patient reported from India



**Figure 3:** Paraffin section of dermoid showing keratinized stratified squamous epithelium with underlying skin appendages (curved arrow)

since birth, progressively increasing in size over the past 5 years [Figure 1a and b]. On examination, the swelling was soft, fluctuant, and was negative for trans-illumination. Radiological examination revealed a 5 × 5 × 4 cm swelling overlying the AF [Figure 2]. The computed tomography (CT) and magnetic resonance imaging (MRI) scans revealed a patent AF [Figures 2a-d]. The cyst fluid was isointense to cerebrospinal fluid (CSF) on both T1W and T2W images [Figures 2c and d]. The proximity to the superior sagittal sinus is depicted in on MR Venogram [Figures 2e and f]. Surgical excision was performed [Figures 1c and d]. There was no adherence to the superior sagittal sinus through the patent AF and no intra-dural extension noted. The contents were yellow and pultaceous. Histopathology [Figure 3] confirmed the diagnosis.

BDC is a benign inclusion cyst, arising from dermal elements during ectodermal folding of the neural tube at the end of the 1<sup>st</sup> month of embryogenesis.<sup>[4]</sup> BDC is

described predominantly in children.<sup>[1]</sup> Only six adult patients in five reports are noted<sup>[4]</sup> [Table 1]. This is the first report of BDC in an adult from the Indian subcontinent. Most adult lesions manifest in early childhood and the delayed presentation appears to be due to apprehension on the part of the patient and or family as in our case.<sup>[4]</sup> Early recognition and surgical management is essential, since there have been reports of malignant transformation of scalp dermoid cysts.<sup>[5]</sup> Six patients (all pediatric), in five reports, from the Indian subcontinent or of Indian origin<sup>[1-3]</sup> [Table 1] have been reported. The incidence in India is probably higher than reflected in literature since we reported three patients from the same institute within the span of a year. This is significant when we realize that patients may be undergoing surgical management by pediatric, plastic, or general surgeons. The differential diagnosis includes encephalocoeles, meningocoeles, and sinus pericranii,<sup>[1-6]</sup> thus making it imperative that these surgical interventions should be undertaken only by a neurosurgeon. Compounding the effect is the occasional patient in whom the anterior fontanelle may be patent raising the theoretical risk of injury to the superior sagittal sinus (SSS). The radiology must include reconstructed CT images to rule out a patent AF and if present an magnetic resonance venography (MRV) to assess the proximity of the superior sagittal sinus. BDC, although benign, must be diagnosed and treated early by a neurosurgeon in view of the varied differential diagnosis, which may include intracranial extension and proximity of the SSS, and theoretical risk of malignant change. Adequate preoperative imaging avoids potentially dangerous complications.

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