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Short Report

A Metopic Suture Observed in a 91-year-old Japanese Male

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Abstract: We encountered a complete ectometopic suture in a 91-year-old Japanese male cadaver during a gross anatomy course. It was observed in one of 26 skulls aged from 62 to 92 years and was about 13 cm in length from the bregma to the nasion. It is rare to encounter the metopic suture in a person of advanced age, as in the present case.

Key words: ectometopic suture, bregma, nasion, Japanese male

INTRODUCTION

At birth the frontal bone consists of 2 parts, separated by the frontal or metopic suture from the bregma to the nasion. Their union usually begins in the 2nd year of life and is completed between the 6th and the 8th year, but sometimes all or part of the suture remains in the adult cranium (Bryce, 1915; Clemente, 1985). A cadaver with a complete metopic suture reported by

Table 1. Incidence (%) of the metopic suture observed in the skull

author (year)	race	incidence (%) (No. of skulls with metopic suture /No. of examined skulls)	range of age (year)
Bryce (1915)	Scottish	9.5 (71/750)	adult
	European	8.7 (*)	*
	Mongolian	5.1 (*)	*
	Black African	1.2 (*)	*
	Australian	1.0 (*)	*
Bolk (1917)	Dutch	9.5 (134/1400)	adult
Limson (1924)	Filipino	1.9 (12/619)	6–96
Essen-Möller (1928)	Swedish	9.7 (111/1150)	children and adult
Honda (1936)	Japanese	3.4 (12/352)	16–92
Woo (1949)	Mongolian	9.2 (21/229)	adult
	American Indian	0 (0/168)	*
	African-American	1.3 (3/237)	*
	American White	9.2 (17/185)	*
Okada (1962)	Japanese	2.7 (6/224)	10–70
Furukawa (1971)	Japanese	11.1 (45/405)	adult
Das et al. (1973)	Indian	3.3 (36/1083)	adult
Agarwal et al. (1979)	Indian	2.7 (34/1276)	adult
Ajmani et al. (1983)	Nigerian	3.4 (7/206)	adult
Lee et al. (1989)	Korean	8.3 (8/96)	adult
present study (1997)	Japanese	3.8 (1/26)	62–92

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Limson (1924) was a 96-year-old Filipino female, who may be the oldest in the literature on the subject. We also observed a 91-year-old Japanese male during a gross anatomy course for medical students in 1997.

OBSERVATIONS AND DISCUSSION

We examined 26 skulls aged from 62 to 92 years (16 male skulls, 10 female skulls). A complete ectometopic suture was found in only one case (3.8%, Fig. 1a, b, c), which was about 13 cm in length from the bregma to the nasion, although an endometopic suture was closed with a scar. The sagittal, coronal and lambdoidal sutures remained completely on the outer table, but closed on the inner table.

Incidences of metopic suture are recorded in Table 1. The incidence of metopic suture varies by race. The incidence of metopic sutures in Europeans and white Americans was 8.7 to 10.3%, while in Black Africans and African-American it was 1.2 to 3.4%, and in Asian and Pacific peoples it was 1.0 to 11.1%. The metopic suture seems to appear with higher frequency in the white people and is a relatively frequent anomaly. The incidence in the present study is 3.8%, although only 26 skulls of highly advanced age were used.

There are a few reports concerning the relation of the metopic suture to age in adults as Limson (1924) described. Thirteen of 14 complete metopic sutures were below 60 years old and only 1 was 96 years old (Limson, 1924). All of the 6 complete metopic suture were below 50 years old (Okada, 1962). Ten of 12 complete metopic sutures were below 60 years old, and 2 were 83 and 81 years old (Honda, 1936). Forty of the 44 medio-frontal sutures in roentgenograms were under 57, and 4 were between 57 and 70 (Torgersen, 1950). Most persons with the metopic suture are below 60 years old. Since the cranial suture undergoes progressive obliteration with advancing age (Todd & Lyon, 1924, 1925), it is rare to encounter the metopic suture in a person of advanced age, as in the present case.

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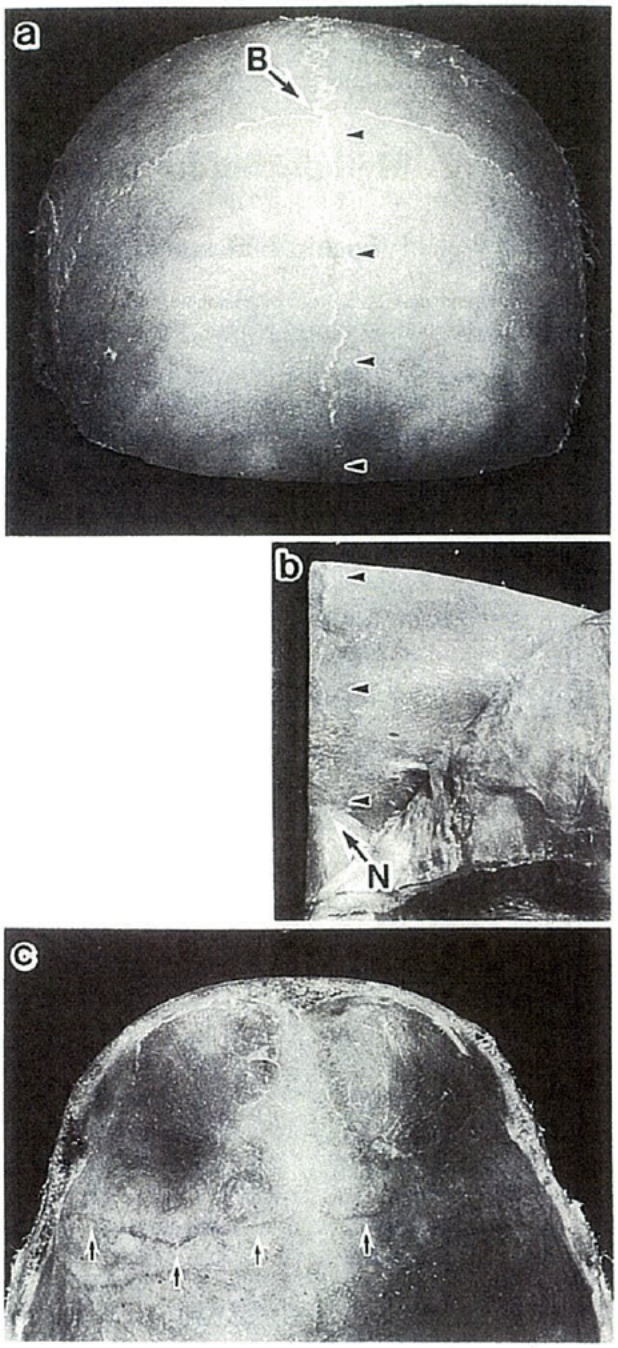

Fig. 1. a and b are photographs showing a metopic suture (arrow heads) on the external surface of the calvaria. c is a photograph of a completely closed metopic suture and an incompletely closed coronal suture (arrows) on the internal surface of the calvaria. The skull has been already coronally and sagittally sectioned; the calvaria (a, c) and a part of the skeleton of the half face (b). White connective tissue is left in the suture (a, b). B, bregma; N, nasion.

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