MENSTRUAL DISTURBANCES IN SELLAR AND SUPRASELLAR SPACE OCCUPYING LESIONS

by

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Introduction

Menstrual disturbances are well recorded as a symptom of sellar and suprasellar space occupying lesions. But to our knowledge, no mention has been made regarding its correlation with pathology or its temporal relationship with the first intracranial symptom. Recently, a referral from a gynaecologist to rule out a sellar pathology in a case of amenorrhoea prompted us to look into the status of menstrual disturbances in these lesions.

Material and Method

Between 1958 to 1980, 41 female patients with sellar and suprasellar space occupying lesions were referred and treated at NIMHANS. Of these, 25 cases fell in the reproductive age group. Cases with any form of menstrual disturbance were analysed for the type of disturbance, its temporal relationship with last delivery and the first symptom, suggestive of an intracranial pathology.

Results

Fourteen cases out of 25 showed evidence of significant menstrual disturbance. The break-up (Table I) indicates that all the 12 pituitary adenomas had menstrual disturbances in some form or the other. Amongst 6 craniopharyngiomas in the reproductive age group, only 2 cases had amenorrhoea. None of the other pathology in that area produced menstrual disturbances.

Amenorrhoea was found in 10 cases (Table II). In five of these, it merged with amenorrhoea following last delivery. In 2 cases, there were irregular menstrual cycles with scanty bleeding. In 1 case (Case 6), patient used to get oc-

TABLE 1

Incidence of menstrual disturbances

Pathology	Total number of Female patients	Cases, in reproductive age group	Patients with Amenorrhoea and menstrual disorders	Percentage
Pituitary adenoma	17	12	12	100
Craniopharyngioma	14	6	2	33.33
Meningioma				
Optochiasmal	5	5	0	00
Arachnoiditis	5	2	0	00
Total	41	25	14	

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TABLE II

Duration and Type of Menstrual Disturbance

Sl. No.	Age	Duration of Menstrual Disturbance	Type of Menstrual Disorder	Duration of First intracranial symptom	First Intracranial symptom	Pathology
1.	37 years	11 years	Amenorrhoea	1½ years	Headache	Chromophobe adenoma
2.	29 years	5 years	Irregular periods	6 months	Diminished vision	Chromophobe adenoma
3.	19 years	1½ years	Amenorrhoea	1½ years	Acromegalic features	Eosinophilic adenoma
4.	31 years	1 year 10 months	Amenorrhoea	3 years	Headache	Chromophobe adenoma
5.	42 years	6 months	Amenorrhoea	1 year	Diminished vision	Chromophobe adenoma
6.	40 years	Since menarche (26 years)	Amenorrhoea (occasional periods once in 3-4 years)	1 year	Headache	Chromophobe adenoma
7.	40 years	8 years	Amenorrhoea	6 months	Headache	? Prolactinoma
8.	35 years	10 years	Amenorrhoea	6 months	Diminished vision	? Prolactinoma
9.	15 years	Did not attain Menarche	Amenorrhoea	3 months	Diminished vision	Craniopharyngioma
10.	21 years	2 years	Irregular periods with scanty bleeding	6 months	Headache	Chromophobe adenoma
11.	32 years	7 years	Amenorrhoea	4 years	Acromegalic features	Eosinophilia adenoma
12.	30 years	8 years	Amenorrhoea	3 years	Headache	Chromophobe adenoma
13.	30 years	12 years	Amenorrhoea	1½ years	Headache	Chromophobe adenoma
14.	31 years	14 years	Amenorrhoea	9 years	Somnolence	Chromophobe adenoma

casional periods once in 3-4 years from the time of menarche. One patient (Case 9) did not attain menarche till the age of 15 years. Duration of menstrual disturbance ranged from 1 year to 25 years, average being 9.34 years. Two cases had non-puerperal galactorrhoea (Cases 7, 8) along with amenorrhoea and visual loss.

Previous obstetric history was normal in all cases, except in case 9, where patient did not attain menarche till the age of 15 years.

First intracranial symptom was headache in 7 cases, diminished vision in 4 cases, acromegalic features in 2 cases and somnolence in 1 case. In 11 out of 14 cases, amenorrhoea antedated the first intracranial symptom. Two cases developed menstrual disturbance after the first intracranial symptom had already occurred. In 1 case, menstrual disturbance

coincided with the intracranial symptom.

Most of the cases were referred to neurosurgical service because of visual loss (Table III). Eight cases were either

TABLE III
Visual Status

Sl. No.	Visual Acuity	
	Right	Left
1.	6/6	6/6
2.	Blind	6/6
3.	6/6	Blind
4.	6/12	6/12
5.	Blind	6/36
6.	Blind	PL +
7.	*F.C. at 4 Metre	Blind
8.	Blind	F.C. at 1 metre
9.	F.C. at 1 metre	F.C. at ½ metre
10.	F.C. at 1 metre	F.C. at 2 metre
11.	6/60	6/60
12.	6/6	6/6
13.	F.C. at ½ metre	F.C. at 2 metre
14.	6/12	6/12

* Finger counting.

blind or nearly blind in both eyes. Two cases had lost complete vision in one eye only. Two cases had diminished vision. Only 2 patients had a normal vision.

Plain X-ray skull showed a ballooned sella in 13 cases (Fig. 1). The only case (Case 14) without a ballooned sella showed evidence of intra- and suprasellar calcification.

One case (Case 4) after surgery in the sellar area delivered a full term normal child by caesarean section 10 months after surgery.

Seven out of 14 cases were seen by a lady doctor (not necessarily a gynaecologist) at some stage of the disease. The diagnoses entertained were proliferative endometritis, infantile uterus and primary sterility. All the 7 cases were put on hormonal treatment. In the remaining 5 cases, cyclic bleeding could be resumed only as long as hormonal treatment continued.

Discussion

The incidence of menstrual disturbance in pituitary adenomas is not surprising, but its low occurrence in craniopharyngioms and other space occupying lesions in that area (Table I) is difficult to understand. Apart from pituitary adenomas that are essentially intrasellar, both the cases of craniopharyngioma also showed definite evidence of intrasellar extension. It is possible that an intrasellar extension is required to give rise to amenorrhoea.

Various types of menstrual disturbances probably reflect the degree of damage to the pituitary axis. The commonest pattern was that amenorrhoea merged with amenorrhoea following last delivery. It is difficult to assess the significance of this observation.

It is interesting to note that in most cases, amenorrhoea antedated the first intracranial symptom by so many years (Mean 8.2 years). Of the 2 acromegalics in this series, in 1 case (Case 11), amenorrhoea antedated the development of acromegalic features by 3 years. How a functional tumour, even at the microadenoma stage, produces amenorrhoea, is not clear.

No correlation appears to exist between amenorrhoea and the type of pathology. The commonest pathology was chromophobe adenoma, which is in conformity with its preponderance among the pituitary tumours. Since facility for estimation of serum prolactin level is not available, it is likely that 2 cases with galactorrhoea probably represent prolactinomas, so commonly described in western literature.

Late referral in these cases is quite evident by the fact that 8 cases were blind or nearly blind at the time of presentation. Since, all cases had gross changes in plain skull radiographs in form of either ballooned sella or calcification, it is surprising that only in 1 case, referral was prompted by the presence of a ballooned sella.

The possibility of regaining normal obstetric function after surgery is very well indicated by one of our cases (Case 4).

Conclusion

Following points emerge from this analysis.

1. Cases of amenorrhoea should be followed up for several years, as the first intracranial symptom may occur as late as 25 years following amenorrhoea.

2. Periodic assessment of visual acuity and perimetry cannot, but be overemphasised as 8 out of 14 patients were either blind or nearly blind.

3. A periodic assessment with plain x-ray skull will also help to recognise these cases much earlier. In the present study 13 cases had a ballooned sella and 1 had evidence of intra- and suprasellar calcification.

4. Presence of ammenorrhoea in the reproductive age group with a suprasellar tumour probably indicates that part of the lesion could also be intrasellar.

5. Timely surgery for these cases will help to prevent visual loss as well as restore normal obstetric function.

References

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See Fig. on Art Paper II