

Lesson of the Week

Focal migraine and pregnancy

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The development of neurological symptoms such as hemiparesis, monoparesis, or hemisensory disturbance is most alarming even if they are only short lived. When these symptoms occur in a young person and are followed by severe headache and nausea the most likely diagnosis is migraine, though, particularly in the first attack, other possibilities may need to be considered. The term "focal migraine" has been used to describe these attacks.¹

When these symptoms occur for the first time in pregnancy there is often considerable concern lest some untimely obstetric event or severe complication of pregnancy is developing and patients are admitted acutely to hospital, usually to the obstetric unit. There the understandably relatively limited neurological experience of the staff leads to continuing anxiety and uncertainty about the underlying cause. After several hours, however, the true nature of the condition is usually apparent and appropriate reassurance, advice, and symptomatic treatment can be given.

Focal migraine causing alarming but transient symptoms may present for the first time during pregnancy

the neurological department were called to the obstetric unit to see eight women with focal neurological symptoms and headache attributable to migraine. One patient was admitted direct to the neurological unit. (Study of the records of hospital discharges for the period disclosed one further woman with these symptoms who had not been referred.) A typical case history is given below, and the appendix summarises the symptoms in the nine other patients.

Case 1—A 19 year old woman in the sixth week of pregnancy developed a left temporal headache one afternoon. After 20-30 minutes she noticed blurred vision to the right, difficulty with speech, right facial weakness, and tingling,

TABLE I—Summary of patients' details

Case No	Age (years)	Gravida	Week of pregnancy	Trimester (time post partum)	History of migraine	History of focal migraine	Family history of migraine	Focal attacks post partum (time seen post partum)
1	19	2	6	1	+	+	+	— (8 months)
2	21	1	11	1	+	—	—	*
3	29	3	31	3	—	—	—	*
4	20	1	37	3	+	+	—	— (3 months)
5	28	2	38	3	+	—	+	*
6	19	1	38	3	—	—	—	*
7	29	4	39	3	+	—	—	+ (18 months)
8	20	2	39	3	—	—	—	+ (2 months)
9	19	1	Post partum	(36 hours)	+	+	+	*
10	30	2	Post partum	(48 hours)	+	+	—	*

*No information available.

Migraine is often said to improve during pregnancy,² but we find that focal migraine with hemiplegic and hemisensory prodromal features may present for the first time during pregnancy, and a busy obstetric unit may see several cases every year.

Present series

In the obstetric department of this hospital in recent years there have been between 4500 and 5000 live births and just over 7000 admissions yearly. In the two and a half years between December 1981 and May 1984 members of

numbness, and weakness of her right arm. The focal symptoms began to improve after one and a half hours and by the time she was first seen in hospital all her symptoms had gone apart from the headache. Examination showed a minimal degree of right upper motor neurone facial weakness. She gave a history of several years of intermittent left sided throbbing headaches, one of which had been associated with transient numbness and weakness of the right arm.

Of the 10 women, two were in the postpartum period and eight were pregnant. Seven gave a history of headache with features compatible with migraine, but only four had ever experienced focal sensory or motor disturbance previously. Both of the women who developed symptoms in the immediate postpartum period had experienced previous, similar episodes. One of these women (case 10) had been free of attacks while pregnant.

Four of the patients were seen again in the clinic and the others were sent a questionnaire about possible further attacks. Despite our writing on two occasions no replies were received and therefore follow up information is sparse. Table I summarises the clinical details of the 10 patients.

Retrospective study of the 10 years between July 1974 and June 1984 showed that only 20 non-pregnant women were referred to our neurological outpatient department with similar symptoms. Table II shows their ages at onset of symptoms. Only two of the 20 had a history of simple migraine or classical migraine with visual prodrome only.

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TABLE II—Age at onset of focal migraine in non-pregnant women

Age (years):	11-20	21-30	31-40	41-50
No of women:	2	12	3	3

Discussion

The data of Critchley and Ferguson in 1933 upheld the view that migraine usually stops during pregnancy.² A more recent study found an overall improvement in 145 of 252 pregnancies in 120 women with migraine.³ Greater relief during pregnancy occurred in those women whose migraine was previously associated with menstruation. This was confirmed by others.⁴ There was no correlation with the sex of the fetus.

That migraine might develop during pregnancy was shown by a survey of 200 women attending an antenatal clinic.⁵ The survey identified 25 women with definite migraine and 16 with probable migraine, but only five of those with definite migraine and three of those with probable migraine had suffered attacks before pregnancy. Of these, three with definite migraine and one with probable migraine improved during pregnancy.

Four years later a similar study of 200 women examined in the last month of their pregnancy provided results more in keeping with traditional thinking.⁶ Thirty eight were found to have a recent history of migraine. Of these, 31 had previously suffered with migraine and only seven had developed migraine during the current pregnancy. In five of these seven cases migraine had developed in the first trimester, in one in the second, and in one in the third. Of the 31 women with a history of migraine, 24 showed improvement during pregnancy, including seven who were free of headaches throughout. The remaining seven either failed to improve or deteriorated. There was no difference in the mean plasma progesterone concentrations of these groups.

The stage of pregnancy when symptoms of migraine occur has been examined. One study found 11 women who developed attacks in the first trimester, nine in the second, and eight in the third.⁵ Thirteen had attacks throughout pregnancy. In another study five of the seven women who developed migraine during pregnancy did so in the first trimester, one in the second, and one in the third.⁶ It was noted that when relief of migraine occurred during pregnancy it happened during the second and third trimesters.

A breakdown of prodromal symptoms was not given in these series, but Callaghan commented that his investigation was prompted by seeing three patients with no history of migraine who had developed hemiplegic migraine during pregnancy.⁵

Isolated case reports include a 25 year old woman who presented in her fourth pregnancy with two episodes of migraine associated with left sided and then right sided weakness and sensory disturbance⁷ and a case of migraine heralded by unilateral sensory disturbance arising for the first time in the third trimester of a 19 year old woman's second pregnancy.⁸

All the women in our series had focal symptoms in association with their migraine. Two of the eight pregnant women had experienced similar symptoms when not pregnant. Both women with attacks of focal migraine coming on in the immediate postpartum period had had previous, similar episodes. One of these women had been free of attacks throughout her pregnancy.

None of the published work reviewed discussed changes in the nature of attacks in relation to pregnancy. Nevertheless, it has been reported that a change from a more generalised form of migraine attack, well established for some years, to a pattern more characterised by a focal onset had been seen repeatedly in women taking oral contraceptives.¹ In this group such a change may be followed by arterial occlusion and is an overwhelming argument for immediate withdrawal of this form of contraception.¹ Fortunately, in pregnancy it does not appear to have the same serious implication.

Our study is too small to allow specific conclusions, but it does show that focal migraine may certainly present in pregnancy for the first time and that it may arise early or late.

Our attention was drawn by the nature of the prodromal

symptoms, and it appears that migraine heralded by unilateral sensory disturbance or weakness may occur relatively frequently for the first time in pregnancy. Since these are frightening symptoms it is important for all those looking after this group of patients to be aware of this usually benign condition.

We are grateful to Dr Simon Currie, Dr David Sumner, and the obstetricians at St James's for letting us see and publish details of these patients.

Appendix

SUMMARY OF PATIENTS' SYMPTOMS

Case 2: Numbness of left face, tongue, and forearm. Flashing lights. Accompanying headache

Case 3: Numbness of mouth and left hand associated with throbbing headache and lasting two hours

Case 4: Awoke with right sided headache and then developed numbness of left arm and leg and left homonymous hemianopia. Episode lasted six hours

Case 5: Paraesthesiae of right arm. Dysphasia. Hemianopia. Focal symptoms lasted two hours. Headache remained overnight

Case 6: Weakness of right arm. Paraesthesiae of right hand and face. Slurred speech. Blurred vision. Focal symptoms lasted several hours leaving headache over right eye.

Case 7: Paraesthesiae of right hand. Dysphasia. Numbness around mouth. Shimmering vision. Focal symptoms lasted 90 minutes and patient then left with mild headache only.

Case 8: Awoke with right sided headache and numbness of left hand, arm, face, and left half of tongue. Also paraesthesiae of right arm and sensory ataxia of legs. Focal symptoms lasted several hours. Headache persisted longer.

Case 9: Numbness of left face, mouth, and hand. Dysphasia. Focal symptoms lasted 15 minutes, followed by throbbing headache

Case 10: Numbness of left arm. Hemianopia. Speech disturbance. Later followed by throbbing headache

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Is there any evidence that the metal "sensors" through which passengers must pass at air terminals have any adverse effect on the developing fetus?

Metal detectors at airports work by producing a weak electromagnetic field: the transmitter generates a 12 volt amplitude pulse with a 600 microsecond pulse width at 200 Hz. The manufacturers point out that this is equivalent to the field generated by domestic wiring leading to a small electric fire, and therefore there should be no health risk. Suggestions¹ that men whose occupation exposes them to electrical or magnetic fields have an increased risk of leukaemia should be treated with caution.² It has been reported from Russia that subjective complaints such as headache, lassitude, nausea, and loss of libido occurred among electricity substation workers exposed to fields over 500 kV, but when the World Health Organisation asked a group of experts to examine this question they concluded that electric fields are harmless up to transmission voltages of 400 kV, and probably 800 kV.³ There has been no suggestion of harm to pregnant women even at these high voltages. Nevertheless, airport authorities point out that if a woman is worried despite these reassurances she can ask to be hand searched instead of passing through the metal detector.—JAMES OWEN DRIFE, senior lecturer in obstetrics and gynaecology, Leicester.

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