July 2nd.—Epistaxis; haemorrhage from ears and eyes.

July 4th.—Bleeding from ears, eyes, nose, and umbilicus.

July 5th.—Slight haematemesis; period began.

July 12th.—Has had haemorrhages off and on from eyes, ears, nose, and umbilicus; period ended.

July 13th.—Seen by physician; no evidence of organic lesion of central nervous system; heart sounds normal; blood pressure 115/80 mm. Hg.

July 14th.—Blood examination: red blood cells 4,400,000, diameter 7.17μ , haemoglobin 74 per cent., colour index 0.84, bleeding time normal; white blood cells 7,750 per c.mm.; differential count: polymorphs 69 per cent., eosinophils 6 per cent., monocytes 1 per cent., lymphocytes 24 per cent. (large 10 per cent., small 14 per cent.).

July 16th.—Blood calcium 10.03 mg. per 100 c.cm.

July 22nd.—Seen by ear-nose-and-throat surgeon, who reported no source of bleeding manifest in the auditory apparatus.

July 24th.—Seen by ophthalmologist. Vision normal in both eyes; bluish sclerotics; fundus normal.

July 28th.—Discharged.

August 15th.—Seen at surgery. Feels and looks well. Period on August 1st as expected; no accompanying haemorrhages.

Thereafter lost sight of as she left this district.

Conclusions

Into what category can we fit this case? The salient features are a history of previous "rheumatism of the nervous system"; with a degrading home life and with a half-formed dread of developing hystero-epilepsy in a girl who, after a definite illness, exhibits hysterical attacks at the time of menstruation, accompanied at times by extragenital haemorrhages. Such a picture does not altogether correspond with one's idea of true vicarious menstruation—that is, substitutional haemorrhage. The sequence of events is not definite enough—sometimes she had "fits," sometimes amenorrhoea, sometimes normal uterine loss, and sometimes extragenital haemorrhages, and sometimes a combination of these phenomena. Nor does it fit in satisfactorily, though it is closer to it, with one's ideas of the supplemental variety of vicarious menstruation, for the haemorrhages did not always correspond with the menses.

A study of the facts of this case offers no explanation as to the exact mechanism of the haemorrhages, except of a rather negative kind. In this case they did not seem to result from plethora nor changes in the blood pressure. Nor does her past menstrual history suggest that defective development of the pelvic organs was a factor in their causation. Apart from a tentative and non-committal "vasomotor instability" there seems no obvious explanation. Certainly self-inflicted trauma can be altogether ruled out—the bleeding was seen by many witnesses, including sceptical sisters, nurses, and house-surgeons.

There is, however, no doubt in my mind but that the "fits" were purely hysterical in character. An old choreic is a notoriously emotional individual at best, and this girl's attention would seem, by a chain of circumstances, to have been focused on her menstrual habits and irregularities, with a resultant mental disturbance.

My thanks are due to Professor Leyland Robinson for his interest in and help with this case.

REFERENCES

- Barnes (quoted in *Menstruation and Its Disorders*).
 Claiborne (quoted as above).
 Condit, W. H. (1916). *Amer. J. Obstet.*, **73**, 238.
 Dippen, P., and Schröder, M. (1906). *Z. klin. Med.*, **59**, 154.
 Gardner, J. A. (1898). *Med. Rec.*, **54**, 173.
 Greig, D. M. (1932). *Edin. med. J.*, **39**, 628.
 Novak (1931). *Menstruation and its Disorders*, New York.
 Solomons, B. (1934). *Handbook of Gynaecology*, London.

THE FRIEDMAN TEST IN HYDATIDIFORM MOLE AND CHORION EPITHELIOMA

BY

P. LAZARUS-BARLOW, M.D.

Honorary Pathologist, Royal East Sussex Hospital,
Hastings

The following four cases in which the forty-eight-hour Friedman test was used show the value of the test so clearly that they seem worth recording. The test was used (1) to establish the presence of a hydatidiform mole or a chorion epithelioma, (2) as a criterion of the complete removal of a mole or the presence of a subsequent chorion epithelioma, and (3) as evidence of the absence of secondary deposits after hysterectomy for chorion epithelioma.

Case I

A patient, aged 29 years, was admitted on January 6th, 1934, for an incomplete abortion. The menstrual periods had been regular, the last being on October 29th, 1933. She started bleeding on December 21st, and the loss had continued off and on until admission; after admission clots were passed at times. On January 16th, 1934, the os was dilated and two pieces of what resembled placental tissue were removed. On the 22nd products of conception resembling a vesicular mole were discharged. Histological examination showed a hydatidiform mole with considerable degeneration. On January 30th the Friedman test was positive. She was sent home on February 10th to attend as an out-patient for further tests. On March 6th the reaction was positive and again on March 26th, when she was readmitted for vaginal haemorrhage. Panhysterectomy was performed two days later on the strength of the Friedman test having remained positive for over two months after the passing of the mole. There was a small tumour in the uterine wall at the fundus, which proved histologically to be a chorion epithelioma. On April 15th the test was positive, and on April 23rd weakly positive. The patient was discharged on May 17th, and further tests as an out-patient on July 3rd, August 1st, and August 27th were all negative.

Case II

A patient, aged 27 years, was admitted on January 11th, 1934, for an incomplete abortion. The periods had been regular but profuse, the last being on September 12th, 1933. In October, 1933, a brownish discharge began and persisted. Two weeks before admission she started to lose blood, at times profusely. On January 27th, 1934, the cervix was dilated and the products of conception removed. These resembled a hydatidiform mole, and histologically very degenerated and oedematous chorionic villi were seen. On January 31st a vesicular mole was passed, and on February 16th the patient was discharged. On February 26th, March 26th, and May 24th the Friedman test was negative. On September 2nd the patient reappeared complaining of a brownish discharge; the test was negative. On December 27th the test was positive, with a history of nine weeks' amenorrhoea. The patient has since been delivered of a full-term healthy child.

Case III

A patient, aged 25 years, was admitted on April 12th, 1934, for flooding after a two-months abortion six weeks previously. On April 15th the uterus was explored and a friable mass removed; histologically this was a chorion epithelioma. On the 16th the Friedman test was positive. Panhysterectomy was performed on the 23rd. On May 1st the test was weakly positive, and it was completely negative on May 22nd, June 25th, July 3rd, and November 12th, 1934.

Case IV

A patient, aged 22 years, was first seen on June 29th, 1936. She had had a normal confinement two years previously, and the periods had been regular, four-weekly, till December, 1935, then three-weekly till late March, 1936. There was no loss in April, 1936. In May she had a profuse haemorrhage, followed by daily bleeding, which was usually slight. On examination the uterus was about the size of a three-months pregnancy, doughy in consistence, and uneven. The os was closed. On June 30th the Friedman test was positive in a dilution of 1 in 100, and a diagnosis of hydatidiform mole was made. On June 7th a tent was inserted and the vagina plugged. Next morning there was a profuse haemorrhage on removing the plug, and the patient collapsed. A direct transfusion of 400 c.cm. of blood was given at 9.15 a.m. At 3 p.m. 5 c.cm. of 1 per cent. Congo-red was injected intravenously and the patient examined under an anaesthetic. Most of the mole was found in the vagina, only small portions being removed from the cavity of the uterus. There was very little haemorrhage, and a further blood transfusion was not considered necessary. Histological examination confirmed the diagnosis. The patient was discharged on July 25th, 1936. The Friedman tests carried out in this case were as follows:

Date (1936)	Urine Undiluted	Urine 1 in 10	Urine 1 in 100
June 30th ...	Positive	Positive	Positive
July 6th ...	Uterus cleared		
July 9th ...	Positive	Weak positive	Negative
July 13th ...	"	Negative	"
July 20th ...	Negative	"	"
August 24th ...	"		
October 12th ...	"		
November 3rd...	"		

Conclusion

Case I shows clearly the value of the test in revealing early those cases of hydatidiform mole which pass on to chorion epithelioma. Tests are being carried out at monthly intervals on Case IV, and will be continued up to the end of a year to exclude this occurrence.

Case II shows the value of the test in confirming the complete removal of the mole and in disproving any pathological significance in the brownish discharge seven months after a mole had been passed.

Case III shows the value in indicating the complete removal of the uterine tumour and the absence of any secondary deposits.

Case IV is interesting in showing the rapidity with which the test becomes negative after the complete removal of a mole, and also shows the value of soap intravenous Congo-red in preventing haemorrhage. In Cases I and III panhysterectomy was performed mainly on the result of the Friedman tests, and in each case this course was completely justified.

In conclusion, I wish to thank my colleagues for permission to make use of the clinical notes of the cases.

The widow of the first Lord Manton and her four sons have made a gift of £8,000 to provide a new x-ray department for the General Infirmary at Leeds. The late Lord Manton, after whom the department will be named, was a large benefactor of the hospital; he was formerly Mr. Joseph Watson, head of the well-known firm of soap manufacturers. Plans for the new x-ray department have already been approved and building will begin almost at once, in the expectation of completing the work by the end of this year.

Clinical Memoranda

Sclerosing Submucosal Injection of the Turbinates

In the treatment of conditions such as early hypertrophic rhinitis, non-specific hay fever, and nasal asthma there is far too great a tendency to have recourse to the thermocautery. The description of a method which can produce excellent results without the same risks may be of service to those unacquainted with it. The mucous membrane of the nose is lined with ciliated columnar epithelium, which has as its function the maintenance of the ciliary stream for the removal towards the nasopharynx of mucus, dust particles, and micro-organisms. Once damaged this ciliated epithelium is not regenerated, but is replaced by squamous cells, with subsequent weakening, if not total loss, of the ciliary stream over the affected areas of the nasal surface. The risks of cauterization are:

(a) The production of adhesions between contiguous portions of the nasal surface, with increase of nasal obstruction, stagnation of nasal secretion, etc.

(b) Over-extensive cauterization, or repeated applications of the cautery (as is so often necessary), cause excessive damage to the ciliated epithelium. Adherence of nasal secretion, with inspissation and crusting, results from the loss of the ciliary stream. In the course of time ulceration occurs, and the condition drifts on into a state of atrophic rhinitis, not uncommonly with fetor—that is, ozaena has been produced.

On the other hand a sclerosing submucosal injection of the turbinates aims at producing scarring in the erectile tissue of the subepithelial layers of the mucosa and in the submucosal space, very little damage being done to the ciliated epithelium. The shrinkage produced is excellent, and close adherence of the mucosa to the underlying bone is secured. The procedure rarely has to be repeated, and when it does is still comparatively harmless. The minimum of inconvenience is caused to the patient. Finally, the results secured have been very satisfactory. Strict attention to detail being of the utmost importance, the technique is given in full. The following will be required:

5 per cent. cocaine solution (with 2 to 3 minims of 1 in 1,000 adrenaline to the drachm); 20 per cent. cocaine solution; 75 per cent. alcohol; 30 per cent. carbolic in paraffin; bicarbonate of soda solution (10 grains to the ounce); nasal speculum; syringe recording minims, with angle mount and special fine three-inch needle; two wooden applicators; gallipot; enamelled iron bowl; cotton-wool; tumbler; kidney basin for used instruments; mackintosh apron for patient's use.

TECHNIQUE

1. Spray the nasal cavity with 5 per cent. cocaine and adrenaline solution.

2. While this is producing anaesthesia and a certain amount of shrinkage, (a) load the syringe with carbolic in paraffin solution; (b) fill the gallipot with 75 per cent. alcohol; (c) fill the tumbler with sodium bicarbonate solution; (d) prepare double-ended nasal brushes with the wooden applicators and cotton-wool.

3. Paint the nasal cavity freely with 75 per cent. alcohol.

4. Touch the spot near the anterior end of the inferior turbinate selected for injection with 20 per cent. cocaine.

5. Give the enamelled iron bowl to the patient to hold, cautioning him to swallow nothing, but at once to spit out into the bowl anything which may run back into the throat.

6. Introduce the needle with loaded syringe attached at the selected spot, then run it along under direct visual control