PURPURA HAEMORRHAGICA AS A COMPLICATION OF PREGNANCY

BY

J. A. CHALMERS, M.D., F.R.C.S.Ed., M.R.C.O.G.
Consulting Obstetrician, Northern Counties of Scotland

Purpura haemorrhagica is generally regarded as a rare but very grave complication of pregnancy. Patterson (1946) collected from the literature reports of 62 cases from 1867 up to the date of his paper. To these he added a further case. He found the maternal mortality was 55%. Mosher (1923) also studied the recorded cases and believed the maternal mortality to be almost 100%, the commonest cause of death being post-partum uterine bleeding. He described the common association of purpura with premature delivery at the sixth to seventh month and noted that infection was usually superimposed. The foetal mortality in his series was in the region of 50%. Rushmore (1925) collected a series in which the maternal mortality was 58% and the foetal mortality 64%. He quoted as typical the case described by Puech in which premature labour occurred at the sixth month and death on the second day of the puerperium from exsanguination as a result of prolonged and persistent uterine bleeding following delivery.

Clinical Picture

In most of the cases in Patterson's series there was no evidence of purpura before the pregnancy, but haemorrhages into the skin and mucous membranes developed at various times during the course of the pregnancy. In addition epistaxis, haemoptysis, or haematuria may be present. The platelet count is lowered and the bleeding time prolonged. Anaemia is usually present, and there may be a personal and a family history of bleeding, as in Patterson's case. This patient's great-grandmother and grandmother were known to have been bleeders, and her mother, when she herself was born, suffered from post-partum haemorrhage and required transfusion. The patient herself had had symptoms of purpura from the age of 4 and in spite of advice to the contrary had become pregnant. Hess's tourniquet test may be positive. The spleen may or may not be enlarged, and Polowe (1944) described a case of splenoma in which extensive areas of necrosis were present in the spleen.

Pregnancy usually continues uneventfully, and labour may be normal until the third stage is completed, when difficulty may be found in controlling the continuous haemorrhage which tends to occur from the uterus and which may lead to death after some days or perhaps hours. Haemorrhage may take place not only from the uterus but also from lacerations of the cervix, vagina, or parametrium, and haematomata may form deep to the vaginal wall as a result of trauma from the passage of the foetal head or from forceps application. When purpura is present pre-eclamptic toxæmia is particularly dangerous owing to the special risk of placental separation and massive intra-uterine haemorrhage. In this connexion Titus (1940) states that some fulminating types of placental separation may be due to purpura.

The bleeding time and platelet count may be normal, but acute attacks of purpura may occur during pregnancy if the platelet count is low. The infant is sometimes affected, but, according to Polowe (1944), more commonly it escapes. Siegler (1934), however, has recorded a case where the mother survived but the infant died of haemorrhage. Patterson distinguishes between chronic purpura,

in which pregnancy is a risk so grave that it should not be undertaken, and acute purpura arising during the pregnancy. In the latter type of case, similar to the one described below, complete recovery may take place and the bleeding time and platelet count, together with the other blood findings, may return to normal before the onset of labour, with or without specific treatment.

Treatment

The treatment most generally advocated is the use of repeated small transfusions of about 200 ml. of fresh blood in an attempt to improve the blood's condition. Iron and calcium may sometimes be given with advantage. Vitamin K will often help to restore bleeding and clotting times to normal. Polowe, who quotes a successful case operated on in the eighth month of pregnancy, advocates splenectomy in all cases, but Patterson considers that this should be reserved for those cases in which conservative treatment fails or in which definite splenomegaly is found.

Interruption of the pregnancy during the acute stage is contraindicated, since this will merely open another channel for haemorrhage. Every effort should therefore be made to keep the pregnancy going until the acute stage is over and to improve the platelet count. Delivery should be carried out with as little interference as possible, since the trauma of an instrumental delivery may lead to extensive bleeding in the paravaginal tissues even in the absence of vaginal laceration. Episiotomy and perineal tears are a further possible source of bleeding and should be avoided.

Bleeding at delivery is not usually excessive, but it continues for hours or days afterwards. Patterson recommends that the uterus and vagina should be packed for 48 hours if there is any bleeding after completion of the third stage. At the end of 48 hours the pack should be removed, but it should be reinserted if bleeding recurs and again removed after a further 48 hours. In view of the danger of infection, treatment with penicillin or sulphonamides may be indicated. When bleeding cannot be controlled by other means hysterectomy may be necessary, but there are strong reasons for not operating on these patients if it can be avoided.

As the infant may be affected by the disease a platelet count should be done as soon as possible after birth, and the child should be observed carefully for evidence of haemorrhage. If necessary transfusion should be undertaken.

Prognosis

The very high mortality rate for both mother and foetus shows how serious is the outlook, but in cases of transient purpura complete recovery may take place before labour begins. A distinction should therefore be made between patients in whom the platelet count is low at the onset of labour and those in whom labour follows some time after all evidence of purpura has disappeared. The following case report shows that the condition may be mild and need not give rise to anxiety.

The patient, a doctor's wife aged 29 years, was first seen at the 35th week of her second pregnancy, the morning after the appearance of a purpuric eruption on the face, neck, and shoulders. Her first pregnancy had been normal in every respect, and her general health had always been good. There had never been any evidence of a tendency to bleeding. Menstruation was always normal and menstrual loss not excessive. During her pregnancy she had been well, and her diet had been adequate. The day before being seen by me she had vomited some undigested food in the evening, but no blood had been noticed in the vomited material. Following this a purpuric rash had been noted on the face, neck, and shoulders. The left forearm gave a positive response to Hess's test, her husband

having taken her blood pressure as soon as the purpuric rash appeared. There was no corresponding rash on the opposite forearm or any sign of bleeding elsewhere. The pregnancy appeared to be normal; the vertex was presenting and the head was still free. Blood pressure was 110/70, and no albuminuria was found.

The patient was brought into hospital, where she was seen in consultation with Professor Stanley Alstead, under whose supervision full blood investigation was carried out. The most significant finding here was a platelet count of 101,500 per c.mm.—i.e., about 40% of the accepted minimum standard. There were some red blood cells in the urine, singly and in small clumps, and clotting time was prolonged to 14 minutes. In a few days, however, without any specific treatment, the rash disappeared and no new ecchymoses were observed. The pregnancy seemed to be progressing normally. There was no evidence of toxæmia, so it was decided to await events. She was discharged from hospital and returned to her home.

A week before term full blood investigation was repeated and appeared to be normal in all respects. The platelet count was 562,320 per c.mm. and the clotting time 6 minutes 45 seconds. The foetal head was by this time engaged in the pelvis, and the pregnancy seemed to be normal. As a precautionary measure it was decided that she should have a small transfusion of fresh blood at the onset of labour and that vitamin K should be given at the same time. A week later there was a small "show," and a slow transfusion of 250 ml. of Group IV blood was given together with vitamin K ("kapon," 4 ml.). A few hours after this labour began; it was completed in about three hours with the delivery of a live female child weighing 8 lb. Immediately after the birth of the shoulders ergometrine, 0.5 mg., was given intravenously and the placenta and membranes were delivered complete without any apparent haemorrhage. There were no lacerations and the uterus contracted well. After the completion of labour bleeding was normal in amount and gave rise to no anxiety. The puerperium was uneventful, and on the fifth day the platelet count was found to be 340,000, the other blood findings also being normal. The child made good progress, being fully breast-fed, and did not seem to be affected by purpura, its platelet count on the twelfth day being 346,000. Both mother and child were discharged home in good condition on the 14th day, and subsequent progress has been uneventful.

Discussion

In 63 previously reported cases of purpura haemorrhagica complicating pregnancy the mortality in both mother and foetus has been alarmingly high, the most recently recorded figure for the former being 55%. The commonest cause of death is prolonged haemorrhage after the completion of the third stage. The case quoted above was mild and transient. Special precautions were taken before and after labour; no undue haemorrhage was observed and the puerperium was normal in all respects. The infant was unaffected. This case confirms Patterson's opinion that there are two different types of case—namely, the chronic, which is associated with all the dangers giving rise to high mortality, and the acute, in which the abnormality may pass off before labour begins and there is no particular danger. The prognosis is good in the acute case unless the acute phase and the onset of labour should unfortunately coincide, but it is not possible to give a prognosis regarding recurrence in a subsequent pregnancy. In view of the very small number of cases recorded it is unlikely that recurrence is common.

Summary

Purpura haemorrhagica is a rare complication of pregnancy. The literature, in which there are records of 63 cases, has been reviewed. A further case is now added.

In the case recorded the purpura was acute and transient, and labour was unattended by any complication.

Treatment should be directed to restoring the blood picture to normal before the onset of labour. If this is impossible special measures for the control of post-partum haemorrhage may be necessary.

The prognosis in the acute cases is good, but there is grave danger of maternal death in the chronic cases.

The foetus is commonly involved, and may die of haemorrhage or of prematurity associated with the early onset of labour in a considerable proportion of these cases.

I am indebted to Dr. H. J. R. Kirkpatrick, Dr. Elemer Forrai, and Dr. Edgar Moyes for the blood investigations in this case, and to Professor Stanley Alstead for his advice in the management of it.

REFERENCES

- Mosher, G. C. (1923). *Surg. Gynec. Obstet.*, **36**, 502.
Patterson, W. B. (1946). *J. Amer. med. Ass.*, **130**, 700.
Polowce, D. (1944). *Ibid.*, **124**, 771.
Rushmore, S. (1925). *Amer. J. Obstet. Gynec.*, **10**, 553.
Sieglar, S. L. (1934). *Med. Rec.*, **139**, 189.
Titus, P. (1940). *The Management of Obstetric Difficulties*, 2nd ed., p. 202. St. Louis.

POLIOMYELITIS

EFFECT OF EXERTION DURING THE PRE-PARALYTIC STAGE

BY

E. R. HARGREAVES, M.D., D.P.H.

Deputy M.O.H., Cornwall County Council

A history of great physical exertion immediately preceding the onset of severe paralysis in attacks of poliomyelitis has often been recorded, but until recently no statistical evidence was available to determine whether such instances were more frequent than chance would dictate. Russell (1947) made a very careful statistical analysis of the degree of physical activity and resulting paralysis in 44 cases of poliomyelitis, and concluded: "Physical activity of any

TABLE I.—Effect of Physical Activity during the Pre-Paralytic Stage on the Severity of Paralysis in 30 Cases of Poliomyelitis. P indicates onset of Paralysis

No.	Age	Sex	Day After Onset of Pre-paralytic Symptoms							Paralysis on Admission	Residual Paralysis at 3 Months
			1	2	3	4	5	6	7		
1	8	M	Nil	Nil	2	2	P	—	—	C	B
2	33	F	Nil	1	1	1	1	—	—	B	A
3	1½	M	"	1	1	1	1	—	—	B	B
4	7	F	"	2	2	2	—	—	—	B	B
5	26	F	"	2	2	2	—	—	—	B	B
6	3	M	Nil	Nil	1	1	P	—	—	C	A
10	1½	M	2	2	2	Nil	P	—	—	C	B
11	4	M	2	2	2	Nil	P	—	—	C	B
13	4	F	1	P	—	—	—	—	—	C	C
15	23	F	Nil	3	3	P	—	—	—	C	F
16	7	F	1	1	1	—	—	—	—	C	F
17	5	F	1	1	1	2	2	—	P	C	B
18	34	F	Nil	Nil	P	Nil	—	—	—	C	B
19	3	F	"	"	"	Nil	Nil	—	—	D	A
20	12	M	"	P	Nil	Nil	Nil	P	—	E	F
21	17	M	Nil	Nil	Nil	Nil	Nil	—	—	F	A
22	2	M	Nil	Nil	Nil	Nil	Nil	P	—	F	A
23	17	M	"	"	"	"	"	—	—	F	A
25	1	F	"	"	"	P	—	—	—	F	A
26	1½	M	1	1	1	—	—	—	—	F	A
27	14	F	1	2	Nil	Nil	P	—	—	F	B
28	9	M	Nil	Nil	"	"	Nil	—	—	F	A
31	28	F	1	1	"	"	Nil	P	—	F	C
32	5	F	Nil	Nil	P	—	—	—	—	F	A
35	5	F	"	"	"	—	—	—	—	F	A
36	34	F	"	"	Nil	P	—	—	—	F	A
37	35	M	3	3	3	—	Nil	P	—	F	F
38	22	M	2	2	3	P	—	—	—	F	F
40	30	F	1	Nil	P	—	—	—	—	F	F
41	35	M	3	2	P	—	—	—	—	F	F
42	21	M	3	3	1	Nil	P	—	—	F	F

Degree of physical activity.—Nil = in bed. 1 = not more than ½ day light work (e.g., resting in house, with short walks). 2 = Average light work (e.g., secretarial, housework, school). 3 = Average or heavy manual work (e.g., factory, labourer, athletic sports).

Severity of paralysis.—A = No paralysis. B = No severe paralysis, probable recovery to full function. C = Moderate paralysis—i.e., moderate multiple paralysis or severe paralysis of a few muscles in one limb. D = Bilateral severe paralysis at any level including trunk, or gross paralysis of one limb. E = Severe and extensive paralysis such as trunk and both lower limbs, or severe paralysis of all limbs. F = Fatal.