LIVER CIRRHOSIS AND PREGNANCY

REPORT OF A CASE FOLLOWING SPLENO-RENAL SHUNT

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Pregnancy in association with hepatic cirrhosis or severe liver disease is a very infrequent occurrence. There are very few reports of such cases.

Burslem *et al.*,[1] in 1952, reviewed the literature of liver cirrhosis and pregnancy and quoted 10 cases. The first case was reported by Scaglione[2] in 1923. This patient had a profuse haematemesis during the second stage of labour and died 14 hours post-partum. The case described by Ashton[3] in 1934 had a severe post-partum haemorrhage followed by a profuse haematemesis. She died 6 months later, 33 days after a splenectomy was performed.

Lascano and Pereyra[4] report a case with haematemesis in the 20th week of a 10th pregnancy in a woman aged 37 years. The foetus died *in utero*, was macerated and weighed 6 lb. 3 oz. at delivery. The patient had a very stormy puerperium, and on the 15th puerperal day had a haematemesis, and 4 days later succumbed to a further large haematemesis.

Burslem *et al.* report a further 2 cases of their own in which there was no suggestion that pregnancy and the puerperium had any injurious effect on the health of the mother in either case.

Slater[5] reports a case of pregnancy occurring in a woman aged 29 years, who had a coarse nodular cirrhosis of the liver. She delivered a 2,550-g. infant and thereafter deteriorated and died one year later. No marked change in the hepatic function during this pregnancy was evident. The infant became jaundiced in the first 24 hours and this cleared on the 13th day.

Mack[6] reports 2 cases of cirrhosis of the liver in pregnancy, the first case, a primipara 28 years old, with a biliary cirrhosis. This pregnancy was terminated at 32 weeks and a normal 5 lb. 4 oz. infant was delivered by Caesarean section under spinal anaesthesia.

The second case was a multipara aged 27 years in whom a 16 weeks pregnancy was removed by hysterotomy. At operation the liver was found to be very small and hard, and inaccessible for biopsy.

There is, however, to my knowledge no reported case where pregnancy has followed on either porto-caval or spleno-renal shunts. The object of this paper is to report a case of liver cirrhosis for which a spleno-renal shunt was done. This was followed by two pregnancies.

CASE REPORT

The patient was first seen on 12 July 1956. She was 24 years of age, a para. 1, grav. 2. Her last menstrual period was on 13 February 1956, making her approximately 22 weeks pregnant. Her blood grouping was A, Rh negative.

Previous Medical History

In December 1949, she suffered from an intermittent febrile illness. No definite diagnosis was arrived at. Except for a leuco-

penia, all the investigations were negative. These included a barium meal, intravenous pyelogram and bone-marrow examination. The attacks of recurrent fever have persisted until the present time.

During February of 1953, after extraction of a tooth, she bled profusely from the socket. At that time the Hess test was positive. There were angiomata on the neck, chest and hands. Liver function tests and bleeding and coagulation times were normal. The platelet count, however, was only 50,000 per c.mm. From about this period the patient started with attacks of purpura associated with menorrhagia and epistaxis. An enlarged spleen was found to be present.

A splenogram revealed a marked ectasia of the portal vein. Following on this a splenectomy and spleno-renal shunt was performed. At operation markedly dilated veins were found at the hilum of the spleen, and a multilobular cirrhosis of the liver was present. A biopsy from the liver microscopically revealed the picture of a gross hepatic cirrhosis. A diagnosis of Banti's disease was made.

Post-operatively the platelet count was 278,000 per c.mm. Except for a post-operative pneumonia, the patient recovered well. There were no further attacks of purpura, although the intermittent attacks of pyrexia have persisted.

Obstetrical History

Within the first month of her marriage the patient conceived, and on 7 April 1955 a lower segment caesarian section was performed. Following on the operation, the patient was severely ill. She was sensitive to most drugs and lotions, and developed a severe allergic dermatitis, bordering on an exfoliative type. There was gross oedema of the vulva which persisted for some time.

Present Condition

Patient approximately 22 weeks pregnant. She feels extremely well and no abnormalities found at all. Hepatic function tests, bleeding and coagulation times and the blood picture were all within normal limits. She still suffered from intermittent attacks of pyrexia. The liver edge was not palpable, and there was no liver dullness to percussion.

About 2-3 weeks after her first visit, she presented the picture of a threatened abortion, complaining of severe labour pains. She was confined to bed and in spite of fairly heavy sedation the pains persisted. At that time, a marked oedema of the lower limbs was noticed. In view of this, the liver function tests were repeated and found to be normal. The serum electrolytes were also done and were all within normal limits, except for a low serum sodium which was 118 mEq./l. (Normal 135-152 mEq./l.)

Disregarding the oedema, she was given a high salt intake with a dramatic disappearance of the pains. From then on the patient progressed extremely well and the oedema gradually subsided. Subsequent serum-sodium values were within normal limits.

There were no further incidents during the ante-natal period, the patient gaining 33 lb. during her pregnancy.

On her due date (20 November 1956) at 2.30 a.m. labour commenced and progressed very well until 3.30 p.m. when the patient complained of continuous pain over the previous section scar. She was in very strong labour, the head was not engaged, membranes intact, and the cervix was 3+ fingers dilated. In view of the continuous pain, the theatre was prepared for a Caesarean section. As the patient was transferred to the theatre the membranes ruptured, and the patient appeared to be bearing down. On examination the head was now found to be engaged and on rectal examination it was well below the ischial spines. The cervix was fully dilated.

Under cyclopropane analgesia a forceps delivery of a healthy female infant, weighing 7 lb. 8 oz. was performed. The placenta was removed manually and exploration of the uterus revealed a very thin, broad, intact lower-segment section scar.

Except for a mild pruritus, which was easily controlled, the puerperium was uneventful and the mother and child were discharged on the 10th postpartum day.

DISCUSSION

Endocrine changes associated with hepatic cirrhosis are well-known. Lloyd and Williams[7] write on a series of cases where endocrine studies were done on cases of Laennec's cirrhosis. In the females there were alterations in the menstrual pattern, libido, body hair, the uterus and other target organs of oestrogen, including the breast. Seven of 8 subjects who were in the reproductive age had menstrual abnormalities. Four of these patients had amenorrhoea, or infrequent bleeding. One of the cases aged 38 years had amenorrhoea for 8 months where endometrial biopsy showed an extremely atrophic endometrium. Following adequate therapy with good compensation of liver function, this patient again began to have cyclic menstrual periods.

There was decrease of axillary hair and atrophy of the breasts in 5 of these 7 patients and chronic cystic mastitis in one.

It is reasonable to assume that the infertility in women suffering from severe hepatic disease is due to the associated endocrine and general metabolic upset.

The present case had no difficulty at all in conceiving. This might be due to the fact that, in spite of the histological picture, her hepatic function was well compensated. There was no indication of any deterioration in her condition. On the contrary, the patient seemed to improve as the pregnancy progressed. The oedema present gradually disappeared while on the high salt intake.

The episode of painful uterine contractions is interesting. The explanation of this is still very doubtful. An associated suprarenal failure as a cause of a low serum sodium is not very likely.

The rarity of pregnancy in cirrhosis may be more apparent than real. The advent of fairly reliable tests has made the clinicians alert to the possibility of making an earlier diagnosis, and it is to be expected that reports of pregnancy in cirrhotic women will appear more frequently in future. The difficulty thus arises as to what advice to give these patients. If they appear to be fit and well compensated, there seems to be no indication for termination of the pregnancy. Unfortunately, however, a certain number of cases will appear in good health and liver function tests will not be indicative of gross liver pathology, nor will these cases suggest the presence of associated varices. These are the cases that are liable to have the unexpected haematemases.

Hoffbauer *et al.*,[8] in 1950, measuring simultaneously intra portal and intra-abdominal pressures in dogs, demonstrated that any act on the part of the animal which resulted in an increase in the abdominal pressure, such as defaecation, urination or vomiting, was reflected by an increase in pressure in the portal vein and inferior vena cava. The straining that accompanied vomiting resulted in the highest values observed. The rise of pressure after exercise was not significant. Ingestion of food produced a sharp rise in intra-abdominal pressure and an increase in the pressure of the portal and inferior vena-caval systems. In the majority of instances the portal pressure returned to normal within 2 hours.

It is thus quite reasonable to expect a gradual rise of pressure in the portal system as the abdominal cavity is filled by the growth of pregnancy. This rise in portal blood pressure might well be the trigger mechanism causing the formation or rupture of oesophageal varices. Haemorrhoids which are often troublesome in pregnancy could be grossly aggravated in cases complicated by cirrhosis.

Individual consideration must be given to each case and no generalizations can be made. The case reports in the

literature show that liver cirrhosis, at least in not very advanced stages, is compatible with uneventful pregnancy and labour, and that a very pessimistic attitude is not justified.

Where the pregnancy is allowed to proceed, a diet high in protein and rich in calories should be prescribed. Small frequent meals rather than large meals should be taken. Regular medical and obstetrical examinations are essential, and any deterioration in the patient's condition should be assessed with a view to the termination of the pregnancy.

The problem of premature induction of labour arises. The only possible advantage of this is that the length of time aggravating the portal hypertension is decreased. Strict bed rest in the latter stages of the pregnancy with the onset of spontaneous labour would most probably be much more advantageous than having to deal with complications arising out of unsuccessful premature inductions.

Caesarean section should be performed only for obstetrical reasons or where urgent termination of the pregnancy is required.

The patient should be well sedated during the first stage of labour and should not be allowed to strain, especially when full dilatation of the cervix is reached. Forceps delivery should then be performed. The effect of the Valsalva manoeuvre on portal pressure is well known. Palmer,[9] measuring the pressure in oesophogeal varices during this manoeuvre, demonstrated a rise of 150-265 mm. of water. This effect should obviously be avoided in hepatic cirrhosis and especially where a shunt operation has been performed.

In the puerperium the patient should remain at strict rest and regular medical follow-up should be carried out. The value of antibiotics during labour and the immediate neonatal period is doubtful. The problem of further pregnancies is a difficult one, but here again each case must be dealt with individually. The importance of full investigation during the non-pregnant state is stressed, particularly a barium swallow for the presence of oesophogeal varices. I feel that if these are demonstrated, future pregnancy is definitely contra-indicated.

SUMMARY

1. The literature of hepatic cirrhosis complicated by pregnancy is reviewed.
2. There are very few cases reported in the literature.
3. A case is reported where pregnancy followed on a spleno-renal shunt.
4. The care of these cases is discussed and the problem of future pregnancies mentioned.

I am indebted to Prof. O. S. Heyns for allowing me to publish this case.

ADDENDUM

During publication of this paper I received a letter from the patient informing me that she is again pregnant.

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