

Summary

The widespread systemic nature of certain cases of rheumatoid arthritis has been noted.

It is suggested that "rheumatoid disease" is a preferable term whose principal clinical manifestation is "arthritis."

Three cases of joint and lung lesions are recorded, and it is suggested that they are among the clinical manifestations of "rheumatoid disease."

We are greatly indebted to Dr. J. N. Cumings for help on the pathological side, for the photomicrographs, and for his close study of the histology of Cases 1 and 2; to Dr. A. Signy for much helpful criticism; to Professor Robert Platt for kindly allowing us to include Case 2; and to Dr. G. Batten for help on the radiological side.

REFERENCES

- Bohrod, M. G. (1947). *Amer. J. Med.*, **3**, 511.
 Cecil, R. L. (1946). *Textbook of Medicine*, p. 457. Philadelphia
 Daley, R., and Miller, H. G. (1946). *Quart. J. Med.*, **15**, 255.
 Ellman, Philip (1947). *Proc. R. Soc. Med.*, **40**, 332.
 — and Weber, F. P. (1948). *Ann. rheum. Dis.* In press.
 Gouley, B. A. (1938). *Amer. J. med. Sci.*, **196**, 1.
 Hensch, P. S., and Rosenberg, E. F. (1944). *Arch. intern. Med.*, **73**, 293.
 — *et al.* (1948). *Ann. intern. Med.*, **28**, 114.
 Klemperer, P. (1948). *Ibid.*, **28**, 1.
 McKeown, E. F. (1947). *J. Path. Bact.*, **59**, 547.
 Neuburger, K. T., Geever, E. G., and Rutledge, E. K. (1944). *Arch. Path.*, **37**, 1.
 Rakov, H. L., and Taylor, J. S. (1942). *Arch. intern. Med.*, **70**, 88.
 Rich, A. R., and Gregory, J. E. (1943). *Bull. Johns Hopk. Hosp.*, **73**, 239.
 — (1946). *Ibid.*, **78**, 1.
 Weber, F. P. (1946). *Lancet*, **2**, 931.

CORD COMPLICATIONS DURING PREGNANCY AND LABOUR

BY

JOYCE MORGAN, M.D., B.Sc., M.R.C.O.G.

Obstetrician, Hillingdon County Hospital, Uxbridge

Considering the length and slenderness of the umbilical cord, it is surprising that cord complications do not occur more frequently. Prolapsed cord, which is the commonest of these complications, occurred in only 50 cases out of a total of 10,000 deliveries—i.e., 0.5%. Munro Kerr (1937) gives an incidence of 0.25% and DeLee (1943) an incidence of 0.8%.

The 42 cases treated in this hospital are listed in Table I. Eight patients were admitted with dead babies and therefore received no special treatment. A summary of the 50 cases is given in Table II.

Three of these cases are given in further detail because of their special interest.

Mrs. A., aged 35; 2-gravida; married 12 years. Admitted with severe pre-eclamptic toxæmia, not improved by rest. Surgical induction performed at 28 weeks with a Drew-Smythe catheter. At half dilatation, hand and cord prolapsed beside head. Attempt at reposition unsuccessful. Forceps then applied to foetal head, but, though small, the head was too large to be delivered through the thick half-dilated cervix. Two incisions made in cervix, and infant, weighing 2 lb. 8 oz. (1.13 kg.) delivered alive. Cervix sutured. Mother made uneventful recovery. Infant lusty at birth and remained healthy. It is now 2 years old.

This delivery may appear to be rather heroic treatment but is justified by results.

Mrs. B., aged 28; 2-gravida; admitted at term as a transverse lie. External version to vertex performed, and patient sent to x-ray department for pelvimetry. Membranes ruptured and cord prolapsed while patient was on the x-ray table. Patient was returned to the ward in the knee-chest position and the cord replaced through a quarter-dilated cervix. Pulsation in

the cord returned after reposition, and caesarean section was performed. At operation the cord was found to be stretched tightly across the head, and the child was still-born.

Mrs. C., aged 26; primigravida; term. Breech presentation at term. Fairly easy external version to vertex, but foetal heart became irregular and slow. A few minutes afterwards the heart returned to normal and the foetus was left as a vertex, with the head above the brim. Membranes ruptured early in labour, and the foetal heart became irregular. The head was still high, but when it was pushed down into the pelvis with a hand above the symphysis the foetal heart stopped altogether, returning as soon as the pressure was released. It was decided that this was the so-called "occult type" of prolapsed cord—i.e., the cord was probably nipped between the foetal head and the pelvic brim. Caesarean section was therefore performed and a healthy infant obtained. The cord was twisted loosely round the child's body, but the actual prolapsed loop was not seen, as it would be dislodged as the head was delivered.

Apart from prolapse of the cord, the following cord complications can occur:

Cord Round Neck or Body

With an active foetus, or with repeated antenatal versions, the umbilical cord may be wound round the neck or body once, twice, or three times. Only once have I seen the cord four times round the neck of the foetus. Strangulation *in utero* or during birth may result. This condition of the cord is usually recognized only during labour or at delivery, but in a few cases it can be diagnosed during pregnancy. The following three cases illustrate the point.

Mrs. D., aged 35; primigravida; breech presentation at term. Easy antenatal version, but directly after version the foetal heart dropped to 80. The heart rate gradually returned after a few minutes and the foetus was left in the vertex position. Labour started spontaneously a few days later. Delivery was normal, after a rapid labour, but the infant was still-born, with the cord tightly round the neck twice.

Mrs. E., aged 35; primigravida. Breech presentation at 36 weeks. Easy antenatal version, but foetal heart stopped. Foetus was turned back to a breech, and the heart restarted as soon as the foetus reached the transverse position. This manoeuvre was repeated the following week with exactly the same result. It was therefore concluded that the foetus had a short cord or the cord was round the neck, and that this would cause delay in delivery and probably stillbirth. It was decided to deliver by caesarean section at term. At operation it was found that the cord was twice round the infant's neck and that there was an area of haemorrhage at the root of the cord where it had been pulled upon during the antenatal version. The infant was healthy, weighing 6 lb. 15 oz. (3.15 kg.), and the mother made an uninterrupted recovery.

Mrs. F., aged 34; primigravida; term. Breech presentation. Easy version, but foetal heart dropped to 100 and became muffled and irregular. The foetus was turned back to a breech. A second attempt a few minutes later produced the same result, so that the foetus was left as a breech. In this case also caesarean section was performed at term, and the cord was found to be wrapped round the neck and body. The infant was healthy, and the mother made a satisfactory recovery.

Over-activity of the foetus with self-strangulation is illustrated by the next case.

Mrs. G., aged 29; 2-gravida. At 38 weeks the head was high and the foetal heart was heard. The patient was healthy, with a blood pressure of 120/68, no albuminuria, and a negative Wassermann. Three days before term the foetus became increasingly active and then all movements suddenly stopped. Labour began spontaneously, and when the membranes ruptured the liquor was deeply stained with meconium. The infant was still-born and macerated, and the cord was wound tightly round the neck three times, with tension at the umbilicus.

Cord round the neck, apart from causing foetal distress, may prevent engagement of the head and so increase the duration of labour.

TABLE I.—*Summary of Cases*

Gravid	Maturity (Weeks)	Presentation	Dilatation	Method of Delivery	Infant
2	28	Head, hand, and cord	Half	Dilatation of cervix; forceps delivery	2½ lb. (1.13 kg.). Healthy, lived
1	28	Vertex	2 fingers	Internal version after reposition of cord; foot pulled down, normal delivery	3 lb. 9½ oz. (1.63 kg.). S.B.
1	38 (twins)	Breech (1st twin)	Full	Normal delivery	4 lb. (1.8 kg.). S.B.
3	28	Transverse	"	"	2½ lb. (1.13 kg.). S.B.
2	28	Vertex; acute hydramnios	"	Internal version to breech; normal delivery	2 lb. (0.9 kg.). S.B.
1	34	Vertex	"	Normal	4 lb. 4 oz. (1.9 kg.). Healthy
4	36	"	"	"	4 lb. 13 oz. (2.18 kg.). Healthy
1	S.I. with Drew-Smythe catheter for toxæmia	"	"	"	"
1	31	"	"	"	"
1	Acute pyelitis	"	"	"	"
1	36	"	1 finger	Caesarean	3 lb. 15 oz. (1.78 kg.). Alive, but died during 1st week
1	Induction with D.S.C. for toxæmia	"	"	"	4 lb. 10 oz. (2.1 kg.). Healthy
2	Term	Transverse	Three-quarters	Internal version to breech; manual delivery	7 lb. 6 oz. (3.35 kg.). Healthy
1	"	Vertex	Half	Dilatation of cervix and forceps delivery	7 lb. 1 oz. (3.2 kg.). Healthy
2	40	"	Three-quarters	Forceps	7 lb. 10 oz. (3.46 kg.). S.B.
3	40	"	Prolapse during surgical induction	Internal version to breech; normal delivery; caesarean not contemplated because of patient's general condition	9 lb. 9 oz. (4.34 kg.). S.B.
2	40	"	Full	Forceps	6 lb. 12 oz. (3.06 kg.). Healthy
1	40	"	Half	"	6 lb. 2 oz. (2.78 kg.). Healthy
1	40	Breech	One-quarter	Caesarean	7 lb. (3.17 kg.). Healthy
2	40	Vertex	Full	Forceps	6 lb. 9 oz. (2.98 kg.). Healthy
2	40	Breech	One-quarter	Caesarean	7 lb. 7 oz. (3.37 kg.). Healthy
1	40	Vertex	Full	Forceps	7 lb. 8 oz. (3.402 kg.). Healthy
1	40	"	"	"	5 lb. 10 oz. (2.55 kg.). Healthy
4	36	"	One-quarter	Caesarean	7 lb. 5 oz. (3.32 kg.). Healthy
1	S.I. for toxæmia	"	"	"	"
2	40	Transverse	Full	Internal version to vertex; forceps	7 lb. 3 oz. (3.26 kg.). Healthy
5	40	"	Three-quarters	Internal version to breech; manual delivery	11 lb. 3 oz. (5.07 kg.). S.B.
2	36	"	"	"	7 lb. (3.17 kg.). S.B.
2	40	Vertex	"	Forceps	6 lb. 12 oz. (3.06 kg.). S.B.
2	40	"	"	Caesarean	S.B.
1	34 (twins)	Breech (1st twin)	One-quarter, Full	Manual delivery with forceps to after-coming head	5 lb. 11 oz. (2.58 kg.). Healthy
1	40	Vertex	Onset of labour	Caesarean	Healthy
1	40	"	Half	Forceps on full dilatation	6 lb. (2.72 kg.). S.B.
2	40	"	Full	Forceps	6 lb. 4 oz. (2.83 kg.). Healthy
2	40	Transverse	Onset of labour	Caesarean	7 lb. (3.17 kg.). S.B.
2	40 (twins)	" (2nd twin)	Full	Internal version to vertex; forceps	7 lb. (3.17 kg.). Healthy
5	40	"	Half	Manual dilatation of cervix; internal version to breech; manual delivery	8 lb. 4 oz. (3.74 kg.). Healthy
1	40 (twins)	Breech (2nd twin)	Full	Manual	5 lb. 8 oz. (2.5 kg.). Healthy
1	40	Vertex	"	Forceps	7 lb. 9 oz. (3.43 kg.). Healthy
5	40	"	"	"	7 lb. (3.17 kg.). S.B.
2	36	"	One-third	Manual dilatation of cervix and forceps	4 lb. 12 oz. (2.15 kg.). Alive. Died of cerebral haemorrhage
1	S.I. for toxæmia and Rh-neg. blood	"	"	"	"
2	40	"	"	"	"
2	38 (twins)	Hand, foot, and cord (2nd twin)	Three-quarters Full	Manual dilatation of cervix; forceps Internal version to breech; manual delivery	7 lb. 8 oz. (3.4 kg.). Healthy 6 lb. 11 oz. (3.03 kg.). Healthy
2	36 (twins)	Transverse	"	Internal version to breech; manual	3 lb. (1.36 kg.). Alive. Died of cerebral haemorrhage
2	S.I. for toxæmia	"	"	"	"
2	37 (twins)	Vertex	"	Normal	4 lb. 4 oz. (1.9 kg.). Alive. Died of cerebral haemorrhage
3	S.I. for toxæmia	"	"	"	"
3	36	"	During induction of labour	Caesarean	6 lb. 8 oz. (2.95 kg.). Healthy

TABLE II.—*Prolapsed Cord*

Method of Delivery	Alive	Stillbirth	Neonatal Death	Total
Natural forces	4	9 (8 dead on admission)	1	13
Forceps	13	5	1	18
Caesarean	6	2	—	8
Internal version and manual delivery	5	6	1	11
	28	22	3	50

Living : 56%. S.B. : 44%. N.N.D. : 3%. Foetal salvage : 50%.

Mrs. H., aged 24, primigravida, had a labour lasting 48 hours. There was delay in descent of the head, and foetal distress developed early in the second stage. Forceps were applied and a healthy infant delivered weighing 6 lb. 11 oz. (3.03 kg.). The cord was short and was round the neck, preventing descent of the head and causing foetal distress.

Mrs. L., aged 38; primigravida; term. Head high throughout pregnancy and during labour. Pains fairly strong after rupture of membranes, but no descent of the head. Foetal distress appeared and caesarean section was performed. At operation the cord was found to be wrapped four times round the neck, preventing descent of the head and causing foetal distress. The infant was shocked at birth, but recovered. The mother made an uninterrupted recovery.

Foetal distress was the only sign in the following three cases :

Mrs. J., aged 32; primigravida; 36 weeks. Foetal distress at full dilatation. Foetal heart rate 80, with passage of thick meconium. Forceps delivery performed. No disproportion,

but cord round the neck and both arms, and pulsating feebly. Pulsation restarted strongly when cord was unwound. The infant was healthy and weighed 4 lb. 7 oz. (2 kg.).

Miss K., aged 23; primigravida. Severe pre-eclamptic toxæmia at 36 weeks, with spontaneous onset of labour. Labour progressed normally until the end of the second stage, when the foetal heart suddenly stopped. The infant was still-born, with the cord very tightly round the neck.

Mrs. L., aged 34; primigravida. Labour started spontaneously, but foetal distress occurred at the beginning of the second stage. Forceps were applied, and a healthy infant weighing 5 lb. 15 oz. (2.7 kg.) was delivered. There was no disproportion, but the cord was wound tightly round the neck, causing foetal distress.

These last few cases show the importance of frequent auscultation of the foetal heart throughout the second stage of labour and the need to have everything ready for a rapid forceps delivery in such an emergency.

A short cord may cause delay in descent of the head and foetal distress, but I have not had a case of this sort requiring operative intervention in my series.

True Knot in the Cord.—A true knot in the cord is often seen after delivery, but in most cases it is formed during delivery, when a loop of cord is slipped over the infant's head or shoulders. True knots can occur *in utero*, especially after antenatal version or with a very active foetus. I have myself seen only one case of a true knot which might have been the cause of stillbirth, but this occurred in a patient with severe pre-eclamptic toxæmia. There was a tight knot in the macerated cord, but death

might have been due to maternal toxæmia. A case of true knot in the cord causing foetal distress during labour was described recently by Price (1947).

Incidence of Cord Complications

Cord complications are rare, but the foetal death rate due to them is very high. DeLee gives the foetal death rate in treated cases as 40–50% and in untreated cases as 80%. In this series the foetal death rate in treated cases was 40.5%. Because of this rarity it is difficult for any one person to get sufficient experience in the treatment of cord complications, and this is one reason why the foetal death rate will always remain high. Early diagnosis and adequate treatment are essential, and two necessities for treatment are an intelligent and well-trained nursing staff and a resident obstetrician.

Diagnosis and Treatment

The diagnosis of prolapsed cord may be made first by seeing the cord presenting at the vulva. More commonly the first indication is slowing of the foetal heart, the cord being found on routine vaginal examination. In a few cases the cord is nipped at the pelvic brim and cannot be felt with the examining finger.

The treatment of prolapsed cord depends on the presence or absence of foetal heart sounds and on the degree of dilatation of the cervix. In all cases except where the cord is macerated the patient is placed in the knee-chest or the high Trendelenburg position while preparations for further treatment are being made. Pressure on the cord can further be relieved by the operator inserting two fingers into the vagina and holding up the presenting part above the brim. Even when pulsation has ceased, relief of pressure on the cord sometimes restores the circulation, but the foetus cannot stand total obstruction of the cord for more than a very few minutes. The knee-chest or Trendelenburg position, though useful in an emergency, can be maintained for only about 10 to 15 minutes without great discomfort to the mother. When operative intervention is to be used the patient can be anaesthetized in the Trendelenburg position, and should be moved only when the operator is ready to begin. If the cervix is as much as three-quarters dilated, then immediate delivery is performed—by forceps in a vertex presentation or by manual delivery of a breech or transverse lie. In such circumstances there is no need to waste time trying to replace the cord. When the cervix is less than three-quarters dilated the difficulties are increased.

Reposition of the cord can be attempted, but this, easy in theory, is very difficult in practice, and the actual reposition may cause further foetal distress by pressure and kinking. If this method is tried the hand is the best repositor, but the cord is an awkward and slippery organ with a will of its own. The foetal heart must be counted at least every five minutes after reposition in case of further pressure as labour progresses. In one case it seemed to me to be a good idea to give an injection of nikethamide into the cord before reposition, and this was tried. The foetal heart improved in tone and frequency, but the cord continued to bleed at the site of injection.

Internal version to a breech presentation is not satisfactory. The idea is that the breech fits less closely into the brim and so leaves more room for the prolapsed cord. In practice this does not work very well, because the cord may become entangled round one leg or the child may sit down on it at the level of the brim.

Caesarean section is the method of choice when the cord is pulsating strongly, the cervix is less than three-quarters dilated, the operating theatre is available, and the operation

is quick. It is no good subjecting a mother to caesarean section for prolapsed cord if the infant is going to be still-born. She can have her stillborn infant without the added discomfort of an abdominal incision.

There were no maternal deaths in this series. Though the foetal results are poor, they can be improved by constant watchfulness on the part of the midwife and by quick and accurate diagnosis by the obstetrician, with minimum delay in treatment.

REFERENCES

- DeLee, J. B. (1943). *Principles and Practice of Obstetrics*, p. 654. Philadelphia.
Kerr, J. M. Munro (1937). *Operative Obstetrics*, p. 201. London.
Price, John (1947). *British Medical Journal*, 1, 928.

HODGKIN'S DISEASE CONFINED TO THE JEJUNUM

BY

G. L. ROBINSON, M.D.

Pathologist to the Seamen's Hospital Society

The subvariety of Hodgkin's disease affecting the alimentary tract, though by no means excessively rare, is better described in journals than in textbooks. A clear outline of its features, with references to date, is given by Hayden and Apfelbach (1927), who selected 26 previously reported cases for their study, adding three of their own: spleen and liver are not enlarged and nodules within them are uncommon; mesenteric but not other groups of lymph nodes are involved; lesions in the gut tend to be multiple and small, starting in the mucosa or submucosa, forming an ulcer with an enclosing "wall," and quickly penetrating muscular and serous coats; histologically, lymphocytes and endothelial cells predominate, while Sternberg-Reed cells are scanty; symptoms are intestinal and not of long duration; death often follows perforation or haemorrhage, or is cachectic.

The case here presented conforms to the above description and is very similar to that published (without necropsy) by Badia (1943) of a woman aged 29, with a six-months history, who died seven weeks after a loop of small intestine had been resected and diagnosed histologically as Hodgkin's sarcoma of the jejunum.

Case Report

A ship's chief wireless operator, aged 51, was admitted to the Dreadnought Seamen's Hospital on June 20, 1947, with a three-months history of burning epigastric pain two hours after meals, loss of 1 st. 7 lb. (9.5 kg.) in weight, loss of appetite, and weakness of the legs when climbing ships' ladders. Vomiting had not occurred and the bowels were regular. Except for pneumonia eleven months before (Long Island College Hospital), his health had been good. His mother had died at 84 (heart) and father at 79 (cancer of stomach); two brothers and a sister were alive and well. Physical examination revealed wasting, very bad teeth, and no palpable glands. Weight was 6 st. 12 lb. (43.5 kg.), blood pressure 110/70 mm. Hg., pulse 100 (and higher thereafter), temperature 96.2° F. (35.7° C.), but between 99 and 102° F. (37.2 and 38.9° C.) thereafter.

The following investigations were carried out. Radiograph of chest: chronic bronchitic changes. Barium meal: stomach and duodenum appear normal. Barium enema: there is a filling defect in the sigmoid. Urine: no chemical or microscopic abnormality. Wassermann and Kahn: negative. Alcohol-histamine meal: no abnormality. Blood count: haemoglobin 53% (Haden); R.B.C. 3.2 millions and W.B.C. 6,200 per c.mm.; colour index 0.83. Sedimentation rate (Westergren): 24 mm. at one, 49 mm. at two hours. Blood urea: 30 mg. per 100 ml. Plasma protein: 5.25% (albumin 3% / globulin 2.25%