On admission he was cyanosed and sweating, but not in pain. He appeared very shocked, but answered questions normally. His temperature was 95° F., pulse 88, and respirations 22. His pupils reacted to accommodation but not to light. His tongue was furled. The cardiac impulse was feeble and the heart sounds were faint but regular. The blood pressure was 58/30 mm. Hg. Some rhonchi and medium rales were heard at the lung bases, but his chest appeared otherwise normal except for a band of anaesthesia over the upper part. His abdomen was soft and not distended, with some tenderness in the right hypochondrium. The right flank was dull on percussion and the area of liver dullness was diminished. The knee-jerks were absent and the plantar responses were flexor. There was a patchy anaesthesia on the outer sides of the legs. The following day he was still cyanosed and weak, but free from pain. The most striking change was the increasing distension of his abdomen. The percussion note had become drum-like, and the liver dullness was now obliterated. No flatus was passed on the insertion of a rectal tube. His temperature in the morning was 98.4° F., the pulse 80, and the respirations 17. The absence of pain or much tenderness, and the steadiness of the temperature and pulse rate, were outstanding features. He became progressively weaker, and died the same day.

Post-mortem Examination.—The air passages contained regurgitated stomach contents. There was a small serous effusion in each pleural cavity and the lungs showed terminal congestion and oedema. All chambers of the heart were dilated and the muscle was soft and friable; the valves were normal. There was atheroma but no other abnormality of the aorta and coronary arteries. The peritoneal cavity was greatly distended with gas and foul turbid fluid. In the stomach, just proximal to but also involving the pylorus, was a perforated chronic peptic ulcer with a crater measuring 2 cm. in diameter. The whole of the floor of the ulcer was deficient.

Discussion

In neither of these cases is the history or physical examination at first suggestive of perforated peptic ulcer. The existence of a disease of the nervous system was known (disseminated sclerosis and tabes dorsalis respectively), but the reason for the collapse was discovered only at necropsy. In the first case medullary failure from a plaque of sclerosis was considered a possible cause; in the second, tabetic crisis, coronary thrombosis, and perforated peptic ulcer were suggested, but no conclusion was arrived at. Both patients were collapsed, but neither of them gave a history of severe abdominal pain. The only pain of any consequence that they had experienced had been in the shoulders. The temperature and pulse rates showed no variation, and, although in the first case the pulse was 160, in the second it was only 88 on admission and fell to 80 subsequently. In neither instance was there any abdominal rigidity, nor was there any tenderness except on deep palpation. The most important positive finding, which was common to both cases, was the development of abdominal distension with a very resonant note on percussion and diminution of the area of liver dullness. This became particularly noticeable in Case II.

A review of all the cases of perforated peptic ulcer that have come to necropsy at St. Bartholomew's Hospital during the past decade revealed that during this period there have been two others with organic disease of the nervous system comparable to the two cases here described. The one, a diabetic woman of 62, was suffering from severe peripheral neuritis. She suddenly developed pain in the left side of the abdomen, with rigidity and tenderness only on the right side. She passed no urine, became incontinent of faeces, and died the next morning. At necropsy a large chronic gastric ulcer was found to have perforated, resulting in diffuse peritonitis. Degeneration

of the posterior root ganglia and posterior columns of the spinal cord, more on the left side than on the right, was demonstrated. The other case was that of a tabetic woman aged 49 who had been admitted to hospital for investigation and treatment of intermittent headaches. One night her pulse suddenly became rapid and weak. Her abdomen was found to be tender and rigid and tympanitic on percussion, but she did not complain of anything. She died the next morning, and at necropsy peritonitis due to a perforated peptic ulcer was discovered.

It is recognized that a peptic ulcer may rarely perforate in an otherwise normal patient without producing the typical syndrome, but it is difficult to assess the proportion in which this occurs. Most of the cases reviewed, in which a perforated peptic ulcer had been found only at necropsy, were admitted in a moribund condition and no clear history had been obtained.

The four cases here described are the only instances during the past ten years in which perforation and organic nervous disease were both present, and in all four the history, symptoms, and signs were atypical. In certain organic diseases of the nervous system it is thus evident that a peptic ulcer may perforate without producing abdominal pain or rigidity and without causing an increasing pulse rate. Presumably this is the result of interference with the normal pathway of pain impulses. In such instances, however, progressive distension of the abdomen with a tympanitic percussion note and diminution of the area of liver dullness are in themselves signs of the utmost significance in arriving at the diagnosis.

We are indebted to Dr. Geoffrey Evans and Dr. James Maxwell for permission to report the cases under their care.

ADMINISTRATION OF PITUITARY EXTRACT IN THE THIRD STAGE OF LABOUR

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It is commonly taught that administration of any oxytocic drug during the third stage of labour is dangerous and inadvisable, in that hour-glass contraction with retention of the placenta and all its attendant risks is apt to result. Here are some conflicting views taken from standard textbooks.

Gibbon Fitzgibbon (1937) says: "There is no place for the drug while the placenta is in the uterus. Its use always entails the risk of imprisoning the placenta by closure of the cervix." Tweedy (1937) also advises against this treatment. Eden and Holland (1937) say that except for experts its use should be limited to the third stage of labour after the placenta has left the uterus. Gibberd (1938) points out the danger of giving any oxytocic drug before the placenta is delivered, on account of the risk of hour-glass contraction. Most American writers, however, are in favour of giving pituitary extract during the third stage. E. A. Schumann (1937) takes the third stage of labour as an indication for administering pituitary extract. He says that 0.5 c.cm. may be given with safety, and adds, "Incarceration of the placenta by a cervix contracted by pituitrin has been reported, but must be quite rare." DeLee (1933) holds that when pituitary extract is administered, which is very often done nowadays after the delivery of the child, the third stage is much altered, and

he goes on to say that the third stage is shortened to five or eight minutes.

At Professor A. M. Claye's suggestion it was decided to test a series of cases in which 1 c.cm. (that is, 10 units) of pituitary extract (or 1 c.cm. of pitocin in toxæmic cases) was to be administered intramuscularly early in the third stage of labour, and to compare them with a similar series of cases in which no oxytocic drug would be given during that stage. This has been carried out at the Leeds Maternity Hospital over the whole year 1937 and part of 1938, until more than 1,000 consecutive cases were obtained for each series.

The experiment aimed at ascertaining: (1) the amount of blood loss post partum; (2) the length of time of the third stage; and (3) any untoward results or dangers which might result. The procedure in all cases was the same. To estimate the blood loss all the blood and clots expelled during or after the third stage were collected until haemorrhage ceased, and the quantity was measured as accurately as possible. No attempt was made to express the placenta until twenty minutes after delivery. It was then expressed if lying in the vagina, but if still in the uterus the procedure was to control the fundus as necessary but not to attempt expression until the placenta had been expelled naturally from the uterus. The surgeon responsible was of course informed, and took the usual steps in cases of post-partum haemorrhage.

Tables A and B give the proportion of cases which fall into different categories as regards quantity of blood loss—A in the control series and B in the pituitrin series. Table C gives the proportion of cases in which the placenta was retained more than one hour. For the purpose of correct comparison the natural deliveries (of which there are 1,368 in the control series and 1,056 in the pituitrin series) have been separated from the cases of forceps, breech, and twins. It is obvious that the same degree of accuracy could not be obtained in cases where operative obstetric intervention was employed, nor are the results likely to be comparable with cases having a natural delivery. The twins series is not claimed as sufficient in number to be of statistical significance, but of the normal deliveries there can be no doubt that over 1,000 cases in each series are enough to be of statistical value.

TABLE A.—Blood Loss (Post Partum) without Pituitrin during Third Stage

Type of Case	Total	Blood Loss in c.cm.				
		0 to 100	100 to 500	500 to 750	750 to 1,000	1,000 +
Natural delivery ..	1,368	398 (29.2%)	799 (58.3%)	110 (8.0%)	42 (3.1%)	19 (1.4%)
Forceps or breech ..	156	54 (34.6%)	86 (55.1%)	9 (5.8%)	2 (1.3%)	5 (3.2%)
Twins	22	6 (27%)	15 (68%)	1 (5%)	—	—

TABLE B.—Blood Loss (Post Partum) with Pituitrin or Pitocin 1 c.cm. in Third Stage

Type of Case	Total	Blood Loss in c.cm.				
		0 to 100	100 to 500	500 to 750	750 to 1,000	1,000 +
Natural delivery ..	1,056	364 (34.5%)	601 (56.9%)	54 (5.1%)	25 (2.4%)	12 (1.1%)
Forceps or breech ..	118	38 (32.2%)	74 (62.7%)	4 (3.4%)	2 (1.7%)	—
Twins	13	3 (23%)	8 (61%)	1 (8%)	1 (8%)	—

TABLE C.—Retained Placenta

	Type of Case	Total Cases	Hours Retained	No.	Per cent.	Ave. Loss c.cm.	No. of Manual Removals
Without pituitrin during third stage	Natural delivery	1,368	{ 1-2	17	1.25	825	2
	Forceps, breech, twins..	178	{ 2-24	3	0.22	—	1
			{ 1-2	5	2.8	—	0
With pituitrin or pitocin during third stage	Natural delivery	1,056	{ 1-2	10	0.95	753	0
	Forceps, breech, twins..	131	{ 2-24	3	0.26	—	1
			{ 1-2	9	6.9	—	0
			{ 2-24	3	2.3	—	1

It will be seen from Tables A and B that whereas 12.5 per cent. (8 + 3.1 + 1.4) of the natural deliveries in the control series are associated with a post-partum loss of more than 500 c.cm., only 8.6 per cent. (5.1 + 2.4 + 1.1) suffer this loss among the natural deliveries in the pituitrin series. In fact, it is noticeable that the general shift in the pituitrin series is towards the left—that is, towards a smaller haemorrhage.

Table C shows that there are twenty-eight cases of retained placenta in the 1,546 patients of the control series, as compared with twenty-five cases of retained placenta in the 1,187 patients of the pituitrin series. Out of these there were three cases of manual removal with one death in the control series and two cases of manual removal with no death among the pituitrin series. The haemorrhage was slightly less in the pituitrin series, the average loss being 753 c.cm., compared with 825 c.cm. in the control series, in cases of natural delivery where the placenta was retained from 60 to 120 minutes. The biggest recorded haemorrhage was among the control series, being over 3,000 c.cm. The patient was given several blood transfusions and made a good recovery.

With regard to contraction ring, only two cases were definite in each series. These, as might be expected, occurred in cases of retained placenta.

Conclusions

The results of this experiment are claimed to show: (a) that there is no danger whatever in giving 1 c.cm. of pituitrin or pitocin during the third stage of labour; (b) that the amount of haemorrhage is not much affected: in the series there was a tendency to a smaller post-partum loss in the pituitrin cases.

It is not claimed that posterior pituitary extract should be given in the third stage as a routine treatment for all cases, nor should control of the fundus or the very watchful care that is necessary at this stage be relaxed, or be replaced by an oxytocic drug.

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