LARGE OVARIAN CYSTS

BY

R. J. LAST, M.B., F.R.C.S.

Professor of Applied Anatomy, Royal College of Surgeons of England; formerly O.C. Abyssinian Medical Unit, British Red Cross Society

The safety of laparotomy has made possible the radical removal of ovarian cysts; consequently there must be few places in the world where cysts are allowed to grow until they outweigh the patient. One such place is Abyssinia, and the reason is not so much the paucity of medical services as the reluctance of Abyssinians to seek surgical relief. Ovarian cyst is very common in Abyssinian women: during 1943 and 1944 very many cases were seen at the British Red Cross Hospital in Addis Ababa. In three of these the cyst weighed more than the patient; they are of interest because of their present-day rarity.

A Typical Case

In the first of the cases the diagnosis was not made immediately. An Amhara woman aged about the middle thirties presented with what appeared to be a very gross ascites, stated to be of some 15 years' duration. The abdomen was globular, its tightly stretched skin being smooth and shiny. An intense fluid thrill could readily be elicited. The woman was extremely emaciated, and unaided could not support the weight of the huge abdomen. One of my assistants had noticed that there was no moving resonance in the abdomen, and that in all postures the colonic resonance remained in the normal bilateral and epigastric positions. I advised paracentesis and a thorough examination of the abdomen after deflation, but owing to pressure of work I did not see her when this was done. After the paracentesis the assistant felt a number of hard rounded lumps in the abdomen. The dark-brown cystic fluid was rich in cholesterol crystals. On these findings, combined with the gross emaciation, he diagnosed peritoneal neoplasm and sent the patient home. After the paracentesis she experienced a comfort she had not known for years, and it was stated that she left hospital in a state of extreme gratitude at having been so readily cured.

The patient came to me three weeks later. Her state of nutrition had improved considerably, but her abdomen was becoming enlarged and she wanted the curative needle inserted again. The presence of abdominal masses was confirmed. They were several inches in diameter, and were hard, smooth, and elastic. They were freely movable and were attached to a palpable cyst wall of leathery consistence. The presence of the cyst wall could be demonstrated readily by sudden pressure over the lower abdomen, which caused a visible fluid wave to rise upwards to a level above the umbilicus, where it was arrested by a convex upper margin.

The patient was admitted to hospital and built up for operation, a process which required several weeks. During this period further paracentesis was necessary to keep the abdomen within bounds.

Operation

The conditions obtaining at operation were so similar in each of the cases that the following general account could apply equally well to any of them. The abdomen was opened under open ether anaesthesia and the greyish cyst wall presented. Adhesions to the omentum, to the mesentery of the small intestine, and to the peritoneum of the posterior abdominal wall were widespread but for the most part tenuous, and required ligature at only a few points. The pedicle was as thick as two thumbs and contained vessels as large as a forefinger. It was several inches long and was ligated with ease. On removal of the cyst the abdomen

presented a curious appearance. The alimentary canal, displaced into the flanks and epigastrium, consisted of thin flattened intestines, pale and bloodless, while the stomach was hidden completely above the left costal margin. In short, the abdomen appeared to be almost empty. We were confronted with visible evidence of the cause of the cachexia—namely, the effect of the mere physical pressure of the cyst in preventing adequate alimentation and absorption.

After removal the deflated cyst showed a dense wall with the consistence of leather. Both in texture and in size it resembled the cover of a deflated football. It could be indented by the fist, and the indentation remained: this sign was elicited through the abdominal wall after paracentesis in the second and third cases. Rounded plaques of greatly thickened cyst wall were scattered over the surface; these explained the masses, which had originally been mistaken for cancerous deposits in the peritoneum. These areas consisted of dense fibrous tissue. In its deflated state the lining of the cyst consisted of a shaggy vascular membrane which must have been very thin in the fully distended state. The cyst was unilocular.

Management

The amount of fluid withdrawn at the original paracentesis of the first case was not noted by my assistant, but it could not have been less than in the other two, in which it was 32 and 30 litres. The patients were in a greatly emaciated state when first seen. After paracentesis their body weight was under 66 lb. (30 kg.), so that the cysts outweighed the patients by several pounds. The patients were aged about the middle or late thirties, and the cysts were stated to have been present for up to 15 years; but as the Abyssinians have little sense of time the duration may well have been less than this.

After the experience of the first case diagnosis was easy in the other two. The length of the history was of obvious significance. The extreme degree of abdominal distension and the lack of movable resonance excluded a diagnosis of ascites. Deflation was performed slowly, with a many-tailed binder maintaining intra-abdominal pressure throughout, for fear of splanchnic dilatation causing collapse. The improvement in nutrition which followed paracentesis was very dramatic: after several weeks each patient had gained weight out of all recognition. Refilling of the cyst occurred at a variable rate, and two or three repeat punctures were necessary to maintain deflation and to encourage alimentation between the first paracentesis and the time of operation.

The accompanying photograph of the second case before paracentesis illustrates the gross deformity which such cysts cause.

Photograph of the second case. The ovarian cyst contained 7 gallons (31.8 litres) and weighed more than the patient.

The appearance of this woman after recovery was very striking. She was plump and smiling and looked at least 20 years younger. Six months after operation she became pregnant and in due course was delivered of a normal baby, whose advent seemed to round off her happy story.

It is the contemplation of such cases as these that emphasizes the debt we owe to the pioneers of abdominal surgery. A condition that presented an insoluble problem less than a century ago is now a commonplace of routine work, and one is apt to forget that it has been made possible in our generation only on the foundations laid by Lister and the men who came after him.

Medical Memoranda

Aschheim-Zondek Test with Urines from Non-pregnant Tuberculous Women

It has been suggested that false positive Aschheim-Zondek and Friedman tests for pregnancy may be associated with pulmonary and genital tuberculosis in non-pregnant women (Allen *et al.*, 1939; Heynemann, 1940; Siegler, 1944; Grollman, 1947).

It seems possible that tuberculosis of the pelvic region, involving the adnexae and, in particular, the ovaries, may cause pathological ovarian dysfunction similar in its effect to physiological dysfunction at the menopause. If so, the subsequent appearance of excessive follicle-stimulating hormone (F.S.H.) in the urine might result in a positive A.-Z. reaction. Such an explanation cannot, however, be accepted for the positive results observed by some workers with urines from non-pregnant women with pulmonary tuberculosis. Genital tuberculosis is invariably a secondary infection (Curtis, 1946), and the recorded positive reactions from pulmonary cases may be due either to non-detection of a secondary infection involving the adnexae or to the patients being at the menopause. So any positive reactions that appear would most likely occur as a result of F.S.H. excretion.

Material and Methods

It has been found that females of *Xenopus laevis* are relatively insensitive to F.S.H. (Landgrebe and Samson, 1944). This fact, coupled with the extraction technique (Scott, 1940), probably accounts for the negative Hogben results obtained in cases of excessive F.S.H. excretion.

The A.-Z. test, on the other hand, may give a positive result with excessive F.S.H. excretion, and pregnancy can almost certainly be discounted if the Hogben test is negative. It was therefore decided to carry out parallel A.-Z. and Hogben tests, according to the modifications of Landgrebe and Hobson (1949), on first morning specimens of urine from 110 non-pregnant women with pulmonary tuberculosis whose ages ranged from 16 to 44 years; 36 women with histories of genital tuberculous lesions and 124 men with pulmonary tuberculosis acted as controls. The results are shown in the Table. If other possible causes of increased F.S.H. excretion can be eliminated (McCullagh and Cuyler, 1940), it was hoped in this way to develop a simple diagnostic test for genital tuberculosis.

Patients	No. of Urines Examined	Aschheim-Zondek		Hogben	
		+	-	+	-
Women with pulmonary tuberculosis ..	110	2	108	0	110
Women with genital tuberculosis ..	36	0	36	0	36
Men with pulmonary tuberculosis ..	124	0	124	0	124
Total ..	270	2	268	0	270

While, however, the Hogben test did not give a single positive, a positive A.-Z. result was obtained from only two pulmonary cases. One of these was extremely weak, the ovary of one mouse had two haemorrhagic follicles, and in the three other test animals no result was found. Repeated tests on this patient failed to produce a further positive.

The second positive result—haemorrhagic follicles in all four mice—was obtained from an unmarried girl aged 18 who had been a bed patient for more than two years. Before admission she had some dysmenorrhoea and an occasional missed period; since admittance her periods, except for a short interval, have been regular. A week later a follow-up test was negative; daily tests were done between periods, and in one, performed two days after menstruation, two of the test animals had enlarged follicles and no blood spots, the other mice being negative. This might occur with urine from normal non-pregnant women.

The mice used in the A.-Z. test are supplied by dealers as 3-weeks-old immature females. In order to obtain some idea of the percentage of false positive results attributable to the test animal, due to spontaneous maturation of their ovaries, examinations of small batches of animals from each delivery were made. In all, some 500 untreated animals were examined, and two of them had ovaries containing haemorrhagic follicles. Therefore, both the positive results obtained might easily have been due to this.

Conclusions

Positive A.-Z. reactions are not usually obtained from urines of non-pregnant tuberculous women. Cases yielding positive reactions reported by other workers are probably due to associated endocrine disorders, menopausal urine, and/or maturity of the test animal. No positive results were obtained with the Hogben test, and it is suggested that this test be used when urines from tuberculous patients are sent for "pregnancy test."

B. M. HOBSON, B.Sc.,

Department of Public Health and
Social Medicine, University of Edinburgh.

REFERENCES

- Allen, E., *et al.* (1939). *Sex and Internal Secretion*. Baillière, Tindall and Cox, London.
- Curtis, A. H. (1946). *A Textbook of Gynaecology*. Saunders, London.
- Grollman, A. (1947). *Essentials of Endocrinology*. Lippincott, Philadelphia.
- Heynemann, T. (1940). *Geburts. u. Frauenheilk.*, **2**, 337.
- Landgrebe, F. W., and Hobson, B. M. (1949). *British Medical Journal*, **2**, 17.
- and Samson, L. (1944). *J. Obstet. Gynaec., Brit. Emp.*, **51**, 133.
- McCullagh, E. P., and Cuyler, W. K. (1940). *Amer. J. clin. Path.*, **10**, 593.
- Scott, L. D. (1940). *Brit. J. exp. Path.*, **21**, 320.
- Siegler, S. L. (1944). *Fertility in Women*. Heinemann, London.