RUPTURE OF GRAAFIAN FOLLICLE WITH MASSIVE INTRAPERITONEAL HAEMORRHAGE

by

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Massive intraperitoneal haemorrhage caused by the rupture of a functioning ovary is a rare condition. According to text-books a case of ruptured ectopic gestation would clinically simulate this condition. But unlike the tubal rupture, a gynaecologist does not, in his or her life time, meet with any significant number of ruptures of the ovary occurring during the course of its cyclic function. The case of a young woman who had undergone the operation of ovarian wedge resection for severe pubertal bleeding and who, two years later, suffered from a rupture of a graafian follicle with massive intraperitoneal haemorrhage is reported here.

Case Report

P. (2190/62), an unmarried girl of 18 years, was admitted on the 18th February 1962, at 3-50 a.m. complaining of generalised pain in the abdomen since the 15th. Along with the onset of the pain, she is said to have had a high rise of temperature which continued till the morning of the 17th. She had also experienced two attacks of giddiness during this period. At this stage she was taken to a village dispensary where she was noticed to be suffering from severe pallor, and a rising pulse rate. Suspecting intraperitoneal haemorrhage, she was directed to the Government Maternity Hospital, Hyderabad, where she had previously undergone an abdominal section.

Previous History. After she attained her menarche at 14, her menstrual periods had been coming on once in every 45 to 60 days and lasting for 15 to 20 days. The loss had been heavy leading to a severe state of anaemia. When treatment on general lines, supported with stilboestrol to control her menorrhagia had failed, she was curetted about the middle of 1959. This showed proliferative endometrium. However the condition continued to be intractable and a second curettage had been performed on 11th November, 1959. The endometrium was again non-secretory in type. Hence bilateral ovarian wedge resection was carried out a week later. The section of the ovary (Fig. 1) had shown a recently ruptured giant follicle besides normal ovarian stroma and other follicular cysts.

Immediately preceding the illness, a few menstrual cycles are said to have improved spontaneously, coming on every 30 days and lasting for 7 to 8 days. Her last menstrual period had started on 1st January, 1962.

Present Condition. The patient was pale, her pulse rate was 140, and the blood pressure 110/70. The abdomen was soft and there was no particular area of rigidity or

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Fig. 1.
Specimen from Wedge re-section showing large follicular cysts. (H & E x 10).

tenderness. The house-surgeon presuming her clinical picture to be not incompatible with her metropathic condition started her on a blood transfusion.

But by midday the patient was seen by the Registrar, who spotted the case as one of intraperitoneal haemorrhage, basing the diagnosis on the presence of dullness in the flanks, on the blood pressure reading which was then 90/60 and on the existence of pain during micturition. Vaginal and rectal examination did not reveal anything abnormal. The patient being an young unmarried woman, the possibility of a corpus luteum rupture suggested itself. Besides the history of prolonged bouts of vaginal bleeding, the patient volunteered about her tendency to bleed heavily from cuts and bruises. But a detailed haematological survey did not reveal any gross abnormality.

Laparotomy was carried out through the old Maylard's incision. The peritoneal cavity was found to be filled with blood. The right ovary was enlarged to the size of a walnut, dark brown in colour with a rupture in it which was plugged with an oldish clot. The tunica felt fibrous. The uterus was normal in size and if any, only slightly enlarged. Salpingo-oophorectomy was carried out on the right side. The left ovary was of the same size as the right, and also distended with a clot. This ovary was incised, the clot turned out and sutured. The total loss of blood (1920 ml) was made good by transfusions given during and immediately following the operation. She made an uneventful recovery.

Figure 2 is the microscopic section of the ruptured ovary, showing the structure of graafian follicle. Figure 3

Fig. 2.
Section of ruptured ovary showing the structure of graafian follicle. (H & E x 21).

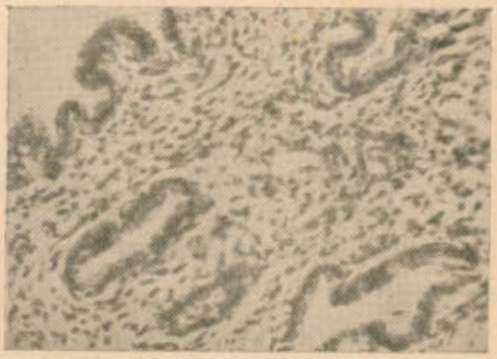

Fig. 3.
Endometrium in proliferative phase at the time of the ovarian rupture. (H & E x 270).

shows the endometrium in proliferative phase at the time of the ovarian rupture. Endometrial biopsy repeated during two succeeding periods persistently showed proliferative phase.

Discussion

Israel (1937) reviewed a collected series of 300 cases of intraperitoneal

haemorrhage of such ovarian origin. Taniguchi and Kilkenny (1951) surveying the 74 cases, then in literature, had added a further group of 10 cases of rupture of corpus luteum. But Rosenthal (1960) narrates about his personal series of 11 cases met within a period of 18 months. This is not surprising, for a high incidence is usually met with when any particular problem is pursued with special interest. Rosenthal had encountered even four cases with massive intraperitoneal haemorrhage. and as Hack had claimed the sixth case only in 1958, the present one from Hyderabad would easily be the eleventh case of such severity to be reported.

The source of bleeding could either be the graafian follicle or the corpus luteum although it is easier for such a haemorrhage to occur during the stage of vascularization of the latter. Even Novak (1958) had not recorded any form of bleeding from the stigma of a graafian follicle as being an usual feature at ovulation. But rupture of the corpus luteum during pregnancy as reported by Sloan (1948) is rather likely on account of its size and vascularity. When considering the source of bleeding, the yellow wall of the bleeding cavity should not be taken to indicate the existence of a corpus luteum, for Israel (1942) had indicated that even a follicular cyst, an atretic cyst, a corpus luteum cyst or even a heamatoma could present such an yellow tinge on its wall. The actual condition could best be differentiated by histology or even better by histochemistry while at the same time these data need to be supported by an endometrial biopsy. But it may not always be possible to correlate the source of rupture to the time relation in the menstrual cycle (Weil, 1934). This point is also exemplified by the case reported here, for although the rupture occurred on the 28th day after the last period, the bleeding was from a graafian follicle.

A bimanual examination, coitus or even routine physical activity have been presumed to have caused a rupture. But two particular conditions such as anticoagulant therapy, as in the cases reported by Wedsely (1957), and idiopathic type of thrombocytopaenia should be borne in mind as possible predisposing factors.

Clinically, it is possible to meet with different grades of haemorrhage varying from a small clot surrounding the ovary to an extensive blood loss. They have to be differentiated from acute appendicitis and salpingitis. The most common condition causing intraperitoneal haemorrhage and shock is, of course, a ruptured tubal pregnancy. An elevated temperature and the absence of shock tended to mask the clinical picture in this case and led to the diagnosis of intraperitoneal haemorrhage to be initially missed.

Perhaps more difficulties may be met with in regard to the treatment of the lesser varieties. Posterior colpotomy would certainly deserve a place on occasion, both for diagnosis and for undertaking any minor procedure, that may be required.

Conclusions and Summary

1. A case of massive intraperitoneal haemorrhage from a

ruptured graafian follicle is presented in a girl of 18 suffering from pubertal menorrhagia. This may be the eleventh case of the type to be reported.

2. The diagnosis initially was missed because of the absence of shock syndrome, unlike in a case of tubal rupture.
3. Minor degrees of this condition may be commoner than is usually appreciated and require to be differentiated from appendicitis and adnexal inflammation.

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