

A CASE OF UNICORNUATE UTERUS AND UNDESCENDED LEFT OVARY

by

P. C. BANSAL*, M.S., F.R.C.S.

This specimen of female genital organs was obtained at the post-mortem examination of a married female of about 18 years, who was alleged to have committed suicide for having failed to bear any children.

Description and Findings

The *Uterus* was unicornuate. The left tube and the left half of the fundus and body of uterus were absent (Fig. 1).

The uterine tubes: The left tube was absent and the right was normal.

The Broad ligament was absent on the left side.

The Ovaries. The right ovary was lying in its normal position in the pelvis. The left ovary was placed above the brim of the pelvis, in the left iliac fossa. Cut surfaces of both the ovaries were riddled with cysts of various sizes, filled with gelatinous material. The right ovary showed immature graafian follicles and corpora albicantia, the left ovary had only few degenerated graafian follicles and showed some inflammatory reaction.

The fibromuscular mass. Below the left ovary there was a mass of tissue of dark colour (Fig. 1, a). In it

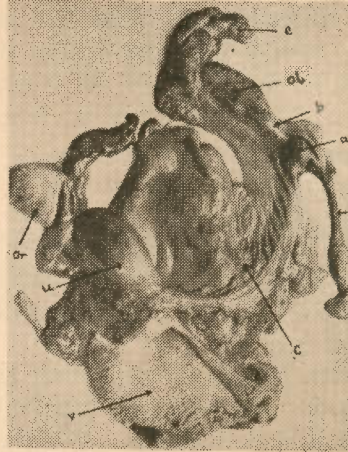


Fig. 1

Photograph of the specimen. (a) fibromuscular mass, (b) fibrous band connecting 'a' to the left ovary, (c) fibromuscular band connecting 'a' to cervix, (d) fibromuscular band going to the left inguinal canal, (e) cysts close to the left ovary, (u) unicornuate uterus, (ol) left ovary, (or) right ovary, (v) vagina (anterior wall opened).

could be recognised smooth muscle fibres and large number of blood vessels (Fig. 2). This mass was connected to the lower pole of the left ovary by a short fibrous band. (Fig. 1, b).

There was a *fibromuscular band* (Fig. 1, c) running from the mass of tissue below the left ovary to the cervix, lying under the peritoneum. It consisted of longitudinally running smooth muscle fibres, amongst which there was a thin-walled tubular structure lined with low epithelium (Fig. 3).

Professor of Anatomy Medical College
Aurangabad, Maharashtra State.

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with mucous coat thrown into longitudinal folds, typical of uterine tube. (Fig. 4).

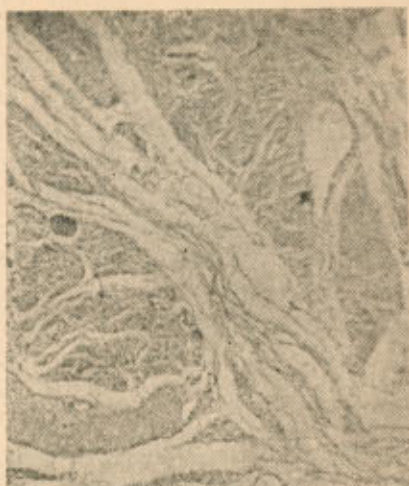


Fig. 2
Section through the fibromuscular mass Fig. 1. a.
60 x



Fig. 4
Section of a segment of a cyst Fig. 1. e. 60 x

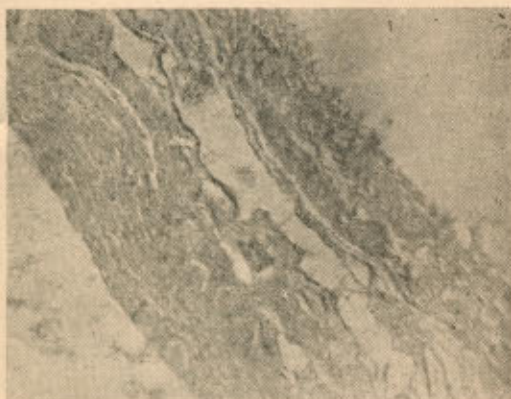


Fig. 3
Section through the fibromuscular band Fig. 1. c.
60 x

The *left kidney* was lying in the left iliac fossa, just above the left ovary. The *right kidney* was at its normal position.

Discussion

The unicornuate uterus with complete absence of one side of uterus and uterine tube is not a commonly occurring anomaly. Schattenberg and Ziskind (1940) reported one such case and reviewed 28 other cases they could find in the literature. The case reported by Shackelford (1937) was not a true unicornuate uterus; one side of uterus and tube were present, but rudimentary. According to Schattenberg and Ziskind, in a true unicornuate uterus, if the uterine tube is at all present it is usually the fimbriated end. The present case is of a true unicornuate uterus, there

There was another fibromuscular band running from the tissue below the left ovary to the inguinal canal (Fig. 1, d).

Close to the upper pole of the left ovary there were three or four rounded, thin walled *cystic bodies*, filled with watery fluid (Fig. 1, e). They had a muscular wall and were lined

being no rudimentary left half of the uterus and the left tube. The term hemi-uterus should be preferred for such a case to differentiate it from a unicornuate uterus where one side of uterus is present but rudimentary; because in such a case not only one half of the fundus, but, as explained below, one half of the body of uterus is also absent. Such a condition is obtained by the failure of one Mullerian duct to develop, or the arrest of its development at an early stage. In this case, though the Mullerian duct has failed to develop normally, its remnants can be recognised in the various tissues found adjacent to the left ovary and the unicornuate uterus. In the mass of tissue below the left ovary there is an attempt at formation of uterine muscle, and the band running from it to the cervix is made up of muscle fibres, together they are the remnants of the part of the left Mullerian duct which would have developed into the left half of the uterus, including its body and fundus. Shumacker (1938), in the case described by him, mentioned a similar band running from an undescended ovary to the cervix, but did not elucidate its significance. The cysts close to the upper pole of the left ovary have the characteristic structure of an uterine tube, and are the remnants of the cranial part of the left Mullerian duct which normally forms the uterine tube. Structure of the various tissues found adjacent to the left ovary and the unicornuate uterus show that they are the remnants of the Mullerian duct; therefore, truly speaking, this is a case of suppressed development of the Mullerian duct rather than its absence.

Schattenberg and Ziskind (1940) found the ovary was absent on the side of uterine abnormality in 9 out of the 28 cases they reviewed. In the case reported by them they found the ovary at the pelvic brim, a position the left ovary occupied in this case. In a case of unicornuate uterus described by Cherney (1939) the left ovary was lying at the internal inguinal ring; there was a round ligament attached to the ovary which could have drawn the ovary to the internal inguinal ring. Meyer and Templeton (1941) differentiate between true inguinal ectopia and acquired hernia of the ovary. According to them, in a true ectopia other anomalies of the urogenital organs may or may not be present. Whereas Heineck (1912) thinks that the presence of uterine anomalies is an important criterion for differentiating ectopia of the ovary from acquired hernia; these anomalies can be absence or under-development of the uterus, uni or bicornuate uterus and female hermaphroditism. Donald (1940) and Meyer and Templeton (1941) have enumerated various factors in the causation of ectopia of ovary. (1) failure of the gubernaculum to find an attachment to the uterus, (2) an open canal of Nück, (3) some hormonal imbalance with a deviation towards male, so that the ovary takes the path of testis.

In the case reported by Cherney (1939) there appears to be a failure of the gubernaculum to find attachment to the uterus though this has not been mentioned in his report. In this case the band (Fig. 1, c) running from the tissue below the ovary to the cervix is a remnant of the left Mul-

lerian duct, and it should not be taken as a part of the gubernaculum of the left ovary, an impression which its position may give. Since the mass of tissue below the left ovary, as shown by its histological structure, is the remnant of the left half of the uterus, the fibrous tissue connecting it to the lower pole of the ovary is actually the part of the gubernaculum which forms the ligament of the ovary. The band (Fig. 1. d) going to the left inguinal canal is the round ligament of the uterus. As it appears from its attachments, this band (Fig. 1. d) could have pulled the left ovary into the inguinal canal, even though it had not done so in this case. This case shows that in ectopia of ovary, failure of development of Mullerian duct is the main causative factor; hormonal effect or an open canal of Nüeck are factors of which there is no proof. In hemiuterus the gubernaculum of the ovary fails to get proper anchorage to the uterus, thus the ovary may remain undescended or may be pulled into the inguinal canal along the part of the gubernaculum going to the inguinal canal.

The vagina in this case is apparently normally developed. Bloomfield and Frazer (1927), and Hunter (1930) have the view that the whole of the vagina develops from the Mullerian ducts. Mckelvey and Baxter (1935) and Monie and Sigardson (1950) think that it is of composite origin, being developed from Mullerian duct as well as urogenital sinus. In this case presence of a normally developed vagina, while the development of the Mullerian duct of one side is completely suppressed, makes one think that Mullerian ducts may have

little or even no part in the development of the vagina, and the whole of this structure is of extra-Mullerian origin.

Summary

A case of unicornuate uterus with associated undescended ovary is discussed. Some bands and a mass of fibromuscular tissue and a few thin-walled cysts were found in relation with the uterus and the ovary; their origin from the various parts of the Mullerian duct is traced. Factors responsible for an undescended ovary are discussed. The possible sources of the development of the vagina are also discussed.

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