

CLINICAL SIGNIFICANCE OF MESONEPHRIC DUCT REMAINS IN HUMAN CERVIX UTERI

A Review of Literature and Report of 3 Cases

by

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The subject of vestigial remnants in the cervix has received little attention in medical literature as compared to the other aspects of cervical structure. Robert Meyer first reported remnants of the Gartner's duct in the cervix of 12 out of 34 women (20%) he examined serially, while Wolfe could demonstrate these residuals in only one case out of 1413 cases he examined. Between these two extreme figures, the following are the other figures that have been reported: Huffman—5 out of 1,192 specimens (1:200, 0.5%); Sneed—31 out of 401 specimens (7.7%). The apparent discrepancy in presumably due to the extent of investigations and number of slides made out of each specimen.

The mesonephros, a primitive genito-urinary organ, undergoes maximum development and regression during early foetal life. With the exception of some broad ligament remnants, mesonephric tissues in the female disappear before birth.

The urogenital system develops from the nephrogenic cord of mesodermal origin. The first structure to

appear is the pronephros which is a transitory vestigial organ in the human, and it regresses in its entirety by the fourth week of embryonic life. The pronephric or Wolffian ducts persist, however, and are appropriated by the mesonephros.

At the height of its development, the mesonephros is a large, raised, elongated structure, with some 20 tubules, each communicating at its lateral end with the mesonephric duct. The ducts extend caudally along each side of the coelomic cavity to empty first into the cloaca, and later in embryonic life into the urogenital sinus. They lie parallel and in close proximity to the paramesonephric or Müllerian ducts. The latter extend first lateral and then medial to the paired mesonephric ducts, and eventually they fuse at their lower ends to form the genital canal.

Regression of the mesonephros takes place at about the 55 mm. stage of embryonic life. The tubules undergo fragmentation and remnants are found in the mesovarium and distal mesosalpinx. Portions of the duct are found parallel with the distal third of the fallopian tube, in the musculature of the cervix and along the anterolateral vaginal wall as far as the hymen,

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Normal Remnants

The normal and cystic structures found in the broad ligament have been fully described in a series of articles by Gardner, *et al.* (1948), whilst Huffman (1948) from the same North Western Medical School, Chicago, has written of the pathology of these remnants and the tumours that can be derived from them.

In the adult female, the caudal one-third of the mesonephric duct, plus approximately 15 tubules in relationship to the cranial part of the duct are preserved; the latter are found in the outer third of the mesovarium and connect with the duct that runs very close to the fallopian tube. Such mesonephric remnants can be differentiated on histological grounds from other epithelial tubules that are of Müllerian origin; the so called accessory oviducts—e.g. the hydatid of Morgagni—represent a developmental error in the formation of the fimbriae.

Most investigators have believed that broad ligament cysts were of mesonephric origin. However, Gardner, *et al.* (1948) established in a study of 78 such cysts that about one-half were of mesonephric origin and the other half of paramesonephric origin, their criteria being differences in size of the epithelial cells and the fact that epithelia of paramesonephric origin show a response to hormonal stimulus, exactly as does the epithelium of the fallopian tube.

Despite the common occurrence of Gartner's duct cysts, and of broad ligament cysts, it is surprising how few references can be found of retention cysts in the human cervix uteri of mesonephric origin.

Case 1

(Gartner's duct cyst)

J. S., 35 years old woman, PO + O, presented herself in the gynaecological clinic with the chief complaint of leucorrhoea. On speculum examination, a thin walled cyst was seen in the posterior wall of the cervix containing clear fluid. There was also an associated erosion of the cervix. Resection of the cyst and electrocoagulation was done. The cyst contained watery fluid, and was extremely thin-walled. On histopathological examination, typical structure of Gartner's duct cyst was seen.

Case 2

(Gartner's duct cyst).

Mrs. P. N., 45 years old, para 6, consulted the gynaecologist for prolapse uterus. On examination she was found to have a first degree cystocele and a relaxed perineum. On speculum examination—a cystic structure was seen arising from the cervix, the size of a duck's egg. It was also thin-walled and shining.

While the structure was being resected out another similar, but smaller cystic structure was noted at its cephalic end. This cyst contained clear watery fluid and on section it was also seen to be a Gartner's duct cyst.

Discussion

The first to call attention to a particular type of papillary cystic adenocarcinoma of ovary characterised by glomerulous-like structure was Walter Schiller (1939). Saphir and Lackner also described a variety of tumour which closely resembled the Schiller variety. Later on, benign and malignant cystic and solid tumours of mesonephric origin were described in different parts of the genital tract along the course of the mesonephric duct. Due to the rarity of these growths, their behaviour as regards malignancy is difficult to establish.

Villasanta, in 1964, reviewed the

subject of mesonephroma and concluded that adenoma of this variety tend to be highly malignant (50% of his collected cases).

Due to lack of proper report and non-recognition in many cases, no opinion can be ventured as regards the rate of malignancy and prognosis.

Benign tumours of cervix of mesonephric origin, specially of the nature of papillary tumour of the cervix in infancy and childhood, have been not infrequently reported in the last decade. Gynaecologists, in general, are very suspicious about any bleeding papillary tumour of the cervix in infancy and childhood. Many of us would take malignancy for granted. Bleeding polyps of the cervix in childhood are taken as manifestations of sarcoma botryoides (mixed mesodermal tumour). But Janovski and Kasdon have reported 5 cases where such tumours were of definite mesonephric origin and benign. Sometimes, it is very difficult to distinguish them histologically from sarcoma.

The tumours of Wollfian origin are usually distinguished from those of Müllerian origin by the lack of mucoproteins and by the presence of psammoma-like bodies.

Case 3

(Mesonephroma of the cervix).

The patient, A. D., 19 years old, unmarried, was admitted on 25-10-66 with the complaint of having had retention of urine one month ago which was relieved by catheterisation. Since then, she has had difficulty in passing urine, frequency and dysuria.

Her menarche was at the age of 12 years and her menstruation was regular, 28 days cycles. She suffered from dysmenorrhoea.

Her last period was 15 days prior to admission.

On examination—she was a thin built, anaemic girl, otherwise well developed. After catheterisation the tumour disappeared.

Bimanual vaginal examination—A firm and irregular mass, non-mobile, felt in midline, about 16 weeks size of pregnancy. This mass replaced the cervix; external os was found tucked up high in the anterior fornix. The left fornix was depressed. A provisional diagnosis of cervical fibroid was made and as she was unable to pass urine after withdrawal of catheter, a laparotomy was decided on.

The abdomen was opened by a lower right paramedian incision. On opening the abdomen the pelvic organs were explored. There was a globular tumour on the supravaginal portion of the cervix. The tumour was thin-walled and was translucent. Accidentally, during operation, sero-sanguinous fluid with degenerated material escaped. The cyst wall was dissected out and removed with difficulty. A similar cyst was found in left broad ligament which was also dissected out. Considering the patient's age, conservative surgery was done.

During the post-operative period, the patient did well up to the sixth post-operative day. On the day of removal of the sutures, granulation tissue-like growth was noticed on the suture line. There was offensive vaginal discharge. Gradually the suture line was replaced by metastatic growth and patient's condition went downhill. She expired 32 days after the operation.

Histological Report. The tumour contained papillary structures, varying in size and shape, which were vascular and showed moderate infiltration with lymphocytes and polymorphonuclear leucocytes. Within the stroma of the occasional papillary structure, calcific aggregates of psammoma-like bodies were seen. There was no mucus present. The structure was a mixed picture of Schiller and Saphir type of mesonephroma.

Thirty-five cases of adenocarcinoma of mesonephric origin in the female genital organs excluding the ovary have been reported in the lite-

ature. About 10 cases of benign adenoma of the cervix have been reported in children which were also of mesonephric origin. Churches has reported a syndrome in which there is persistence of the entire length of mesonephric duct accompanied by renal agenesis of the same side. The mesonephric remnants in the human may give rise to the following growths:

1. Benign cervical cyst—not common (? because proper histological examinations are not carried out).

2. Benign adenoma, specially the papillary variety, occurs in children and may simulate malignancy clinically.

3. Adenocarcinoma of mesonephric origin—altogether 35 cases are reported, all fatal within 1 year of diagnosis.

4. Churches' syndrome which may also affect the cervix.

Summary

The presence of mesonephric remnants are found in the cervix fairly frequently.

These remnants may be the precursor of the cyst, benign papilloma and malignant tumour of cervix. A review of the literature and additional 3 cases are reported, one of which was a mesonephroma of the cervix uteri. A general classification of tumours of cervix which may be of mesonephric origin is presented.

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