

Milestones

John A Sampson and the origins of Endometriosis

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There are few diseases in gynecology that are as enigmatic as endometriosis. The disease is seen in various clinical settings and in a number of clinical manifestations. It mimics several gynecological pathologies and can be a source of dilemma for the clinician. The origins of the disease are just as obscure. Endometriosis remains a disease which has been clinically recognized for nearly 150 years but without a well described etiology. Like preeclampsia, it remains a riddle that baffles researchers and clinicians. It defies a complete description and is replete with theories of its origin and etiology. John A Sampson was amongst the earliest

physicians to be interested in this disease and describe the first theory of its causation.

John Sampson (Figure 1) was born near Troy, New York on 17 August 1873. He studied at the Williams College and graduated from Johns Hopkins in 1899 with a good academic record in medicine. He continued to work there as a resident gynecologist. During his tenure as a resident he showed a keen interest in oncology. He studied the lymphatic drainage of the pelvis and described in great detail the ureteral blood supply. He was amongst the first to realize the importance of the delicate blood supply to the ureter and its importance in radical surgery for cervical cancer. He contributed a number of papers on the subject to the Johns Hopkins Hospital Bulletin. After residency, he moved to Albany where he would continue to practice throughout his professional career. He later became the senior gynecologist at the Albany Hospital and from 1937 was appointed the Professor of Gynecology at the Albany Medical College.



Figure 1. John A Sampson

He became fascinated with the disease process of endometriosis during his clinical practice, where he encountered a number of patients with “chocolate cysts” of the ovary and the dense peritoneal adhesions that resulted from a rupture of these contents. [1] He called these cysts “perforating cysts of the ovary” or if they were intact, ovarian hematomas. Sampson’s early study of the disease began with a detailed description of the nature of the cysts, the patient population which was affected and a detailed histopathological analysis of

the cyst contents. In the first publication, he described the findings of 14 patients with such cysts. [2] He estimated that the incidence was 10% of the reproductive population. He concluded that cysts were a phenomenon of the reproductive age group and were probably driven by a hormonal process. What interested him more was the histopathological nature of the lining of the cysts, the ovarian and periovarian tissue and adhesions. He found that the lining was similar to that found in uterine hematomas. It interested him further that there were numerous other similarities between menstrual lining and blood to the lining of the ovarian cysts and their contents. The lining even corresponded to the phase of the menstrual cycle in a few patients. These findings set of a train of thought and he concluded that there was a strong possibility that the origin of these cysts lay in the transplanted of the uterine lining into the ovary.

He continued his study of the disease and in all described 293 cases over a five year period. [3] He theorized that the obvious explanation for the uterine contents reaching the ovary and the surroundings was via a retrograde flow of the menstrual contents through the fallopian tubes. This was strengthened by the direct observation of menstrual blood escaping through the fimbrial ends of the tubes and endometrial tissue in the lumen of some women at the time of laparotomies scheduled during or soon after the menstrual period. At the 1927 meeting of the American Gynecological Society he presented his findings and the theory of retrograde menstruation as the etiology of endometriosis. The theory was well received especially because the disease process had never been studied in great detail.

It was also anatomically and practically a feasible explanation to the problem. Other aspects of the disease (epidemiology and hormonal dependence) also conformed to the theory. Later workers and scientists would propose alternative explanations and theories based on immunology, extrapelvic sites of endometriosis and its association with genetics. [4] But the retrograde theory was the earliest and was based on keen surgical observations.

John Sampson also described the vasculature of the female pelvis especially in relevance to operative gynecology. An artery which runs under the round ligament is named after him. He served as the President of the American Gynecological Society in 1923. He died in Albany on 23 December 1946. His impetus to study a difficult and until then obscure subject such as endometriosis set him apart from his peers and led to much scientific progress on this disease.

References

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