OVARIAN DENERVATION FOR OVARIAN DYSMENORRHOEA

A REVIEW OF 70 CASES

BY

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Cotte (1925a, 1925b) first drew attention to the ovary as a source of pain in some cases of dysmenorrhoea. L'Hermitte and Dupont, in 1929, and O'Donel Browne (1939a, 1939b) suggested that a painful ovary could be rendered insensitive by denervation—an operation much less severe than presacral neurectomy. O'Donel Browne has shown a cure rate of 80.9% in his series of cases.

We here present 70 cases of ovarian dysmenorrhoea treated by bilateral ovarian denervation. Resection of the ovary was undertaken if the ovary was cystic, and Gilliam's suspension if the uterus was retroverted; appendicectomy was performed in most of the cases. Histological examination of the appendix was made in cases of right-sided pain. We do not consider these additional procedures to have influenced the results.

The ages of the patients were as follows:

Age	No.	Age	No.
Under 20	2 (2.8%)	30-34	11 (15.7%)
20-24	22 (31.4%)	35-39	8 (11.4%)
25-29	26 (37.2%)	40-45	1 (1.4%)

Thirteen of the patients were unmarried. Of the 57 who were married, 33 (58%) were nulliparous and 24 (42%) parous.

Nerve Supply of Ovary.—Sympathetic fibres from the tenth, eleventh, and twelfth dorsal and the first and second lumbar segments reach the ovary via the renal intermesenteric and coeliac plexuses by way of the infundibulo-pelvic ligaments. These are vasoconstrictor. Little is known of the parasympathetic supply except that its action is vasodilator. The sympathetic supply is bilateral. Sympathetic nerve fibres may reach the ovary also by way of the ovarian branch of the uterine artery—these emanating from the presacral trunk.

Diagnosis

Site of the Pain.—In 42 cases (60%) the pain was on the right side, in 22 (31%) on the left side, and in 6 (9%) it was bilateral. It was located in the iliac fossa.

Relation to Menses.—In 28 cases (40%) the pain was premenstrual, in 21 (30%) it was intramenstrual, and in 21 (30%) it was not related. Thus in 70% of the cases pain was related to the periods.

Type of Menstrual Loss.—Menorrhagia occurred in 16 cases (23%), oligomenorrhoea in 9 (13%), and the loss was normal in 45 (64%).

Type of Menstrual Cycle.—The cycle was regular in 61 cases (87%) and irregular in 9 (13%).

The deep sensibility reflex was first described by O'Donel Browne. Bimanual compression of the ovary accurately reproduces the pain of which the patient complains. Only where this test was positive did we consider the case to be one of true ovarian dysmenorrhoea.

Operative Procedure

A midline subumbilical paramedian incision was used. The infundibulo-pelvic ligaments were divided between clamps as near to the ovary as possible so that all the nerve fibres might be included in the clamps. The divided ends were ligated with catgut and care was taken when ligating the medial pedicle that the Fallopian tube was not kinked. If the ovary tended to fall into the pouch of Douglas the ovarian ligament was shortened by a catgut stitch.

The following additional procedures were carried out: Gilliam's suspension in 12 cases (17%), cyst resection in 34 (49%), appendicectomy in 19 (27%), and myomectomy in 3 (4%). All cases in which cyst resection was done had either follicular or corpus luteum cysts.

Results

The cases were examined six weeks after operation. In the follow-up carried out the interval of time elapsing after operation varied between three years and six months. Sixty-five out of 70 replied to the questionnaire.

Six weeks after operation 56 cases (80%) were cured, 12 (17%) were improved, and 2 (3%) were unchanged. At a follow-up of 65 cases undertaken over a period of from six months to three years, 32 (49%) were found to be cured, 29 (44.5%) were improved, and 4 (6.5%) were unchanged.

Comment

It is shown that bilateral ovarian denervation—a simple operative procedure and one not associated with a mortality or morbidity higher than those of laparotomy—cures or greatly diminishes the pain in ovarian dysmenorrhoea.

No case was considered to have any uterine dysmenorrhoea, and in every case the infundibulo-pelvic ligaments were completely divided; yet the pain was still present to some extent after a period of three years in 33 cases (51%) of those followed up. However, in only four cases (6.5%) was there no improvement.

We believe the explanation to be that the sympathetic supply in a percentage of women reaches the ovary along the ovarian branch of the uterine artery. The fibres are therefore a part of the presacral nerve. The following case history seems to confirm this explanation.

A 1-para aged 28 complained of severe right-sided intra-menstrual pain of four years' duration. Plication of the right ovary and appendicectomy had been carried out three years previously without relief. The menses were regular and the loss was normal. She was seen on August 24, 1948, and bimanual compression of the ovaries accurately reproduced the pain of which she complained. On April 22, 1949, bilateral ovarian denervation and Gilliam's suspension were carried out. She reported again 16 months later, as her symptoms were unchanged. Bimanual compression of the ovary again accurately reproduced the pain. As the ovaries were still acutely sensitive we considered that possibly the painful stimuli were reaching them via the presacral nerve along the ovarian branch of the uterine artery. Presacral sympathectomy was therefore performed on September 30, 1950. The pelvic organs at operation were normal. She reported on February 28, 1951—that is, five months after operation—having experienced no pain whatever with her periods. The ovaries were now insensitive on bimanual compression.

Right-sided Pain in Relation to Appendicitis.—Pain was right-sided in 42 cases and bore no definite relation to the menstrual cycle in 21. The condition may there-

fore sometimes be diagnosed as appendicitis. In all cases in which we performed appendicectomy, histological examination of the appendix showed no pathology. In 13 cases previous appendicectomy had produced no change in the symptoms. It therefore seems reasonable to suggest that when appendicectomy is carried out in a young woman, unless the appendix shows definite signs of acute inflammation, bilateral ovarian denervation should also be performed. This necessitates using a paramedian or Battle's incision, but does not add to the operative risk.

Resection of Cysts.—Retention cysts were removed routinely because of the difficulty in deciding which were physiological and which were pathological. Although resection of corpus luteum or follicular cysts was undertaken in 34 cases (48%) we do not consider this to have influenced the results, as every gynaecologist has seen many such cysts in insensitive ovaries.

Effect on Ovulation.—In 10 (14%) the menstrual loss was diminished after operation; in 20 (29%) it was increased, and in 40 (57%) unchanged. It will be noted that the tendency is for the loss to be increased as a result of the operation. Of the 57 married women 9 (16%) later became pregnant. We therefore assume that ovulation is not affected by division of the ovarian arteries.

Summary

Seventy cases of ovarian dysmenorrhoea treated by ovarian denervation are surveyed.

This operative treatment is undertaken only when bi-manual compression of the ovaries accurately reproduces the pain.

Ovarian denervation should be practised in young women in whom definite appendicitis is not found at operation.

Relief was obtained in 93.5% of cases.

Eighteen of the cases were under the care of Mr. R. M. Corbet, and we wish to thank him for permission to include them in this series.

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Malaria has always been the greatest single medical problem for the Army in Malaya, but the War Office states that the disease rate is now under 2% in a year. New methods are being sought—for instance, "paludrine" has in the main supplanted mepacrine as a suppressive, and anti-mosquito measures are augmented by a steady flow of ingenious devices. There has been some speculation about paludrine-resistant strains, although there is no evidence as yet. Nevertheless, there was a recrudescence of malaria last summer. Dysentery and diarrhoea are present throughout the year, with a monthly incidence of between two and three cases per 1,000 troops, the early summer providing the higher figures. Skin complaints are at about three times the rate encountered in England. This may be due to jungle conditions, though in some respects the jungle shields the soldier from infective hazards met with in cantonments. What is more certainly a result of deployment in the jungle is scrub typhus, a few cases of which still occur regularly in spite of the use of clothing impregnated with a mite-killer (or more probably because of a lapse in its use). Finally, as might be expected in a country stretching almost to the equator, cases do occur of heat exhaustion, but there are not many of them. Other than the diseases mentioned and venereal disease, the sickness experience in Malaya is perhaps 15% higher than at home.

EPIDEMIOLOGY OF A HUMAN CASE OF BACILLARY DYSENTERY DUE TO INFECTION BY SHIGELLA FLEXNERI 103 Z

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It is often extremely difficult to trace the source of infection of a sporadic case of bacillary dysentery, and since phage-typing, which has proved so valuable in the epidemiology of salmonella and staphylococcal infections, is not in general use for shigella infections, knowledge of the precise biochemical and serological type of the strain concerned may provide the only guide to the possible source of infection. The point is well illustrated in the following case, in which the source of infection was traced beyond reasonable doubt to contact with an infected monkey.

On February 8, 1951, a specimen of faeces from a girl of 2 years 5 months stated to have dysentery was sent for bacteriological examination to a public health laboratory, and from it an organism giving the biochemical reactions of *Shigella flexneri* was isolated. It was agglutinated by the Standards Laboratory's *Sh. flexneri* Z and *Sh. flexneri* 103 sera, and was subsequently confirmed by the Dysentery Reference Laboratory as a typical *Sh. flexneri* 103 Z, as described in this country by Rewell and Bridges (1948). Though this organism has only once been reported from a human case of dysentery in this country (and the infection may in that case have been acquired in the Middle East), it is a frequent cause of bacillary dysentery in primates imported into Great Britain. In view of this, further investigation into the history of the case was undertaken to try to establish any possible contact with monkeys, and an interesting story was unfolded.

On February 1, 1951, the child was taken by her mother to the Pets' Corner of a large general store where there were several cages of monkeys. While watching them the child was eating an ice-cream cornet, and one of the monkeys put its paw through the cage to grab the cornet. Though the child held on to it, the ice-cream was touched by the animal, and she licked the cornet before the mother could throw it away.

Two days later the child appeared off colour, refused her lunch, and by evening had frequent motions. By February 5 the faeces contained blood and mucus, and medical advice was sought on February 7, when the child was having five or six motions a day, which was stated to be less than when she originally became ill. Apart from diarrhoea, the child had few constitutional symptoms, and difficulty was experienced in keeping her in bed. She was treated with a six-day course of succinyl-sulphathiazole, and, though two faecal specimens received on February 21 and 23 yielded no pathogenic organisms, *Sh. flexneri* 103 Z was again isolated from a specimen received on March 1. A further six-day course of succinyl-sulphathiazole was then given, and the organism was not found in subsequent specimens.

When questioned, the mother admitted to some diarrhoea herself during the child's illness, but she was