

## PRIMARY SOLITARY DIVERTICULITIS OF CÆCUM

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THE subject of diverticulitis was first given prominence by Grasser in 1898, at which time it was known as "Grasser's Tumor." The cases studied by him and by Beer, Fisher, Mayo, and others, involved almost exclusively the sigmoid colon; so that even today "diverticulitis", to the average surgeon, means inflammation in the multiple, acquired or "false" diverticula of the sigmoid.

Telling, in 1908, correlated all the existent knowledge on diverticulitis and classified diverticula as either:

1. Congenital, or "true"—such as Meckel's Diverticulum. (All three coats present.)
2. Acquired, or "false"—such as occurs in the typical case of Sigmoid Diverticulitis. (Only serosa and mucosa present—muscularis absent.)

Telling considered these "false" diverticula as simple hernial protrusions of mucosa, submucosa and serosa (note the absence of the muscular layer) through some weakened area of the bowel wall. Klebbs associated these "weakened areas" with the blood-vessels perforating the circular muscle fibres of the bowel wall and Drummond felt that such blood-vessels predisposed to diverticula just as the spermatic cord predisposes to an inguinal hernia. Other predisposing causes universally acknowledged are obesity, constipation, and increased intra-intestinal pressure from whatever cause.

Drummond insists that all diverticula are "false" (*i.e.*, acquired) and always multiple, with the singular exception of a Meckel's diverticulum. In a recent article on diverticulitis of the cæcum, Greensfelder and Hiller likewise insisted that all such diverticula are "false," whether they occur as a primary condition (due to predisposing causes mentioned above) or whether they occur secondarily to trauma, as in a previous appendectomy; they reported four cases of secondary or post-traumatic solitary diverticula of the cæcum.

Other authorities likewise are insistent that all diverticula (save a Meckel's) are acquired or "false" and represent simple hernial protrusions. I, therefore, wish to report a case I recently operated upon; first, because it is very rare, being a case of inflammation in a solitary diverticulum of the cæcum; but also because histological examination of the removed solitary diverticulum demonstrated the presence of circular muscle fibres in part of its wall, a fact which at least suggests the possibility of its congenital origin. A careful review of the literature reveals only one similar case where circular

## PRIMARY SOLITARY DIVERTICULITIS OF CÆCUM

muscle fibres were present.<sup>7</sup> In this case, reported by Pereira, all three coats were completely present. I am unable to explain, on an embryological basis, the occurrence of a possibly congenital diverticulum of the cæcum, unless it be true as was recently suggested by Greensfelder and Hiller that such primary solitary cæcal diverticulæ may be due to "the retention in some residual form of the appendix which appears early in embryological life but normally disappears before the true appendix develops."<sup>4</sup>

The report of my case follows: Mrs. M. R., sixty-three years of age, white, record No. 31647, was admitted August 7, 1928, on account of pain in right lower quadrant of abdomen, and discharged August 22, 1928. Her family history was negative. Personally, she had suffered from chronic interstitial nephritis, arterio-sclerosis, and hypertension for several years past, and arthritis deformans, involving principally both knees, for past two years. Menopause ten years ago.

The present illness arose suddenly with localized pain over McBurney's point; no preceding generalized abdominal pain. Then followed nausea, but no vomiting. Her fever was 99° F.; this was her first attack.

Physical examination was essentially negative except for abdomen which was tender over McBurney's point and with only a slight amount of localized rigidity present. The pre-operative diagnosis was acute appendicitis, for which operation was done. The appendix was found normal. An inflamed, solitary diverticulum was found adherent to the anterior wall of the cæcum. After separation from surrounding adhesions it was found that the diverticulum arose from the antero-lateral wall of the cæcum, about two inches above the ileocæcal valve. It was about one and a half inches long, tense and congested and contained a large coprolith. The diverticulum was removed and the stump inverted with purse-string. The normal appendix was likewise removed. Uneventful convalescence.

*Laboratory findings.*—Urinalysis—negative. Wassermann blood count 9500—(pre-operative).

*Pathological specimen report.*—1. Normal appendix. 2. Inflamed diverticulum of intestine. This diverticulum is lined throughout with mucosa and contains numerous Lieberkühn glands. The muscularis mucosæ is everywhere present. Surrounding this are a few solitary lymph follicles and fatty tissue. A large patch of circular muscle fibres is also present although it does not completely surround the diverticulum in this particular cross-section. The serosa completely covers the whole diverticulum and all of the layers are moderately infiltrated with lymphocytes, plasma cells, and eosinophilic leucocytes.

Table I shows a tabulation of the essential features in all cases of primary solitary cæcal diverticulitis reported to date, including the above case—eight cases in all. The post-traumatic cases of solitary cæcal diverticulitis reported by Greensfelder and Hiller, Bunts and others, are secondary (not primary) and, hence, not included in this table.

### SUMMARY

A rare case of primary solitary diverticulitis of the cæcum is reported. Rarer still, histological examination demonstrated the presence of a mass of circular muscle fibres in its wall, a condition which would seem to suggest the possibility of its congenital origin, and the theory that, if congenital, it represents a rudimentary appendix is considered plausible. It would seem

TABLE I

Reported by	Sex	Age	Initial symptom	Subsequent symptoms	Palpable mass	Other physical signs	Size of diverticulum	Copro-lith	Operative procedure	Outcome	Previous history	Pre-op. diagnosis	Microscopic examination of diverticulum
Jackson, 1917	F.	23	Pain in R. L. Q.	Fever, nausea, vomiting	Present	Tenderness, rigidity	2½ x 3 in. on antero-lateral aspect of caecum	Present	Partial resection of caecum	Recovery	.....	Acute appendicitis	Not noted
Pereira, 1927	F.	54	Vomiting	Pain in R. L. Q., slight fever	Present	Tenderness, rigidity	½ in. long, 1 in. from orifice of appendix	Present	Excision of caecum and part of ileum	Recovery	.....	Acute appendicitis	All three coats present
Moschowitz, 1918	M.	44	Pain in R. L. Q.	None	Present	Tenderness, localized rigidity	1 in. long	Present	Excision of diverticulum	Post-op. pneumonia, then recovery	.....	Acute appendicitis	"False diverticulum"
Cooke, 1922	M.	53	Lower abdominal pain	Fever	Present	Tenderness, rigidity	1 in. long	Present, 2 cm. in diameter	Total excision of caecum	Recovery	Always constipated	Acute appendicitis	Not noted
French, 1923	F.	29	Nausea	Loss of weight	None	Slight tenderness	¾ in. in diameter	Present, "very hard"	Dislodged caprolith and diverticulum inverted and buried	Recovery	Numerous similar previous attacks	Chronic appendicitis	Not done
French, 1923	F.	62	Pain in R. L. Q.	Vomiting, fever	None	Tenderness, rigidity	Not noted	Present, size of a grape	Excision of caecum	Recovery	.....	Acute appendicitis	Not noted
Potier, 1912	F.	32	Abdominal pain	Vomiting, diarrhoea	Present	Rigidity	Not stated	None	Diverticulectomy, appendectomy	Recovery	.....	Acute appendicitis	Not noted
Leonardo, 1929	F.	63	Pain in R. L. Q.	Nausea, slight fever	None	Tenderness, slight rigidity	1½ in. long, 2 in. above valve, on antero-lateral surface of caecum	Present	Diverticulectomy, appendectomy	Recovery	.....	Acute appendicitis	Circular muscle fibres present

## PRIMARY SOLITARY DIVERTICULITIS OF CÆCUM

that the standard classification of diverticulæ as being "false" or acquired, except a Meckel's, may not be entirely true.

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