

Original Communications.

REMARKS ON WORMS IN THE PERITONEAL CAVITY: WITH A CASE.

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THE common occurrence of worms in the intestines, without any corresponding serious mischief, might, in the absence of other admonitory facts, inspire too confident an opinion of their harmlessness. The *habitat* of the *ascaris lumbricoides* is in the small intestines, where, though often harmless, it is sometimes a mischievous intruder. It would be a waste of words to enumerate all the secondary disturbances in remote organs resulting from its irritating presence in the bowels. I exclude also those rare occurrences noticed by Andral and others, of worms finding their way into the excretory ducts of the liver, and even through the œsophagus into the larynx, with consequent pneumonia, bronchitis, or suffocation. But the point to which I specially invite attention, and which is suggested by the case under review, is,—how far their presence in the intestine endangers ulceration of its structure. Admitting the comparative rarity of the occurrence, it is well, nevertheless, to put on record every well-authenticated case countenancing the probability of so grave a result.

A reference to the subjoined details of the autopsy of a case of this kind, at which I was present, will shew that there was a well-defined circular opening in the duodenum, through which six worms had escaped into the peritoneal cavity. The idea of perforation, we are told by a high living medical authority, is now-a-days discarded. But "*vixere fortes ante Agamemnona multi.*" Even Morgagni himself long ago arrived at the same conclusion. His scepticism as to the power of the round worm to perforate the living intestine appears in his inquiry, "whether, as they (the lumbrici) irritate the intestines in the living body, it is likewise to be supposed in all the histories, which are produced to prove it, that they perforated the intestines before death, or rather that they perforated the intestines after death; and if they did really pervade the intestines before death, whether it was where an abscess or some kind of ulcer had opened them a passage from the intestines." This sagacious remark he sustained by a reference to cases and authorities, in which the intestine was perforated like a sieve, but "these appearances were seen in the *dead* body," where of course decomposition had facilitated the perforation. He then shrewdly asks,—How is it, "when they are seen in the *living* body?" In answer to this question, he quotes a case observed by Hippocrates—that of a little child of Dinius, from whose navel a large worm sometimes came out. This Morgagni explains at once by adding;—"but as a 'fistula' had been left there from a foregoing wound, and the worm and vicious sordes came through the same place, it was certain, beyond a doubt, that the small intestine was perforated, *but it was from a wound.* For that it was perforated by the worm, was not even suspected by the grave interpreter Vallesius." He then quotes from the same authority an example of fifteen worms coming out from the right hypochondrium and the loins on the same side, *yet through tumours which had been formed in both places and suppurated.* Many facts similar to these are on record. Thus in the *London Medical Journal* for 1786, Mr. Coleman gives a case of several worms successively discharged through a sloughing wound in the loin, occasioned by an old hernia; and Dr. Robert Hamilton relates another of worms finding their way through the *navel* of a child, whose funis had been injured at its

birth by rude violence; inflammation of the subjacent parts following, and suppuration ultimately opening a passage from the bowels.

But what Morgagni's sagacity led him to doubt, not to say deny, the possibility of, is not only discarded by modern belief, but actually disproved by the microscope, which has finally disposed of this question, as well as dissipated the day-dream of "spontaneous generation."

Having described the anatomy of its head and lips, Küchenmeister emphatically remarks,—“But the worm can never actively bore through the healthy intestine. For this it is rendered unfit by the structure of its head and its thin lips, *which are certainly adapted for suction, but not for boring.*” It thus appears, that perforation of the living intestine by the *ascaris lumbricoides* is impossible; and that, when this worm finds its way through, there must have been ramollissement or ulceration during life, or decomposition of the tissues after death. The really practical question then arises,—are the worms capable of exciting so much local disease, as to produce ulceration of the coats of the bowel? The affirmative supposition is alike countenanced, I think, by the case before us, and by general reasoning. If they can create so much irritation as they are known to do in remote organs, their presence in the primary seat of irritation may well suffice to originate and maintain local inflammation and its consequences. “Worms,” says Dr. John Mackintosh, “occasionally produce violent colicky affections, with vomiting and purging, sometimes of blood, and, I believe, ulceration of the bowels; and even peritonitis may be excited by this irritation.” To the same effect, and still more to our purpose, Küchenmeister asserts, that “the cause of such perforations lies only in morbid ulcerating processes of the mucous membrane of the intestine, which are certainly mostly of a dyscratic nature (tubercular, canceroid, typhoid). They can only be caused by the worms, when these, being present in great numbers, have led to ileus, inflammation of the intestine, and adhesion of the intestine with partial mortification.” In the case under review, although we could obtain but little knowledge of its previous history, yet the locality of the ulcer, with the absence of delirium, excludes the supposition of the typhoid dyscrasy, as did the appearance of the ulcer and the surrounding parts that of the canceroid; and the general aspect of the patient, and the freedom of his lungs and other organs from tubercular deposits discountenanced that of the scrofulous. The man's bony structure was admirable, his chest well-developed, his muscles unwasted, and his general condition inclined to the adipose. There was every indication, in short, that he was cut off by an acute disease of short duration. It seems probable, that the system had been but little affected by these noxious parasites, until they had succeeded in setting up a local inflammation in the duodenum, which by its results destroyed life.

The case now noticed bears a close resemblance, in everything but its cause, to the case of chronic circumscribed irritation, ending in a perforating ulcer of the stomach, so accurately described by Dr. Abercrombie. The able remarks of Dr. Stokes, in the *Cyclopædia of Practical Medicine*, furnish us also with numerous analogies, which favour the idea of worms being competent to set up a destructive inflammation. To his catalogue of causes producing a perforating ulcer in the intestines,—namely, gastro-enteric fever, catarrhal fever, acute enteritis, phthisis, hypercatharsis, and suddenly suppressed diarrhœa,—we may fairly, therefore, add the *irritation of worms.*

For the following lucid history of the case which has given rise to the above remarks, I am indebted to the kindness of Mr. Evans, the house-surgeon of the Hull General Infirmary.

Peritonitis; Worms found in the Peritoneal Cavity; Perforation of the Intestine; Death; Autopsy. Antonio Krabolo, aged 23, an Austrian sailor, was admitted under

Dr. Sandwith, on December 12th, 1860. His countenance was pale and haggard, and indicative of distress. He complained only of pain in the abdomen. No particulars of his history could be obtained, merely that he had been ill about six days only. He was at once put to bed; and on being seen a short time afterwards, was found in a very depressed state. The warmth of the body was greatly reduced; pulse very small and feeble. Abdomen decidedly tumid, but not particularly painful on pressure, except over the region of the bladder, where there was some dullness on percussion. The catheter was introduced, but only a few ounces of urine were withdrawn. A turpentine fomentation was ordered to be applied to the abdomen:—

℞ Ammon. sesquicarb ℥ij; spiritus æther. nitr. ℥ijj; mistura camph. ad ℥viij. M. Fiat mistura, cujus sumat partem 8vam 3tis horis.

℞ Calomel. gr. j; opii gr. ʒ. M. Fiat pilula cum singulis dosibus misturæ sumenda.

He was ordered to have three ounces of brandy. There being no evidence of his having had any action of the bowels for several days, a common enema was ordered in the evening.

Dec. 13th. He still remained in a state of collapse. The skin was cold and clammy; the pulse at times scarcely perceptible; state of the abdomen was much the same; there had been no action of the bowels. The enema and purgative were repeated, and a grain of calomel (without opium) was prescribed to be taken every three hours. He was ordered to have wine and brandy *ad libitum*. In the middle of the day he vomited a large worm (*ascaris lumbricoides*).

Vesperi. The vomiting continued, but he had thrown up no more worms. Ten grains of calomel in powder were ordered to be taken immediately. He died the same evening at ten p.m.

AUTOPSY, fourteen hours after death. On opening the abdomen a quantity of dirty brown fluid, not having a marked fæcal odour, escaped. There was evidence of intense and general peritonitis. The intestines, especially the small ones, were coated with a thick layer of lymph; and, on peeling it off, their peritoneal coat was found intensely congested. The omentum adhered by effused lymph to the exposed surface of the intestines, and the liver was coated with a layer of the same. On separating the coils of intestine from each other, three worms, similar to the one vomited before death, were found loose in the upper part of the peritoneal cavity. Three more were afterwards found, deep in the cavity of the pelvis. The alimentary canal was removed entire, from the termination of the œsophagus to near the anus. In the stomach were found three more worms; its mucous membrane was healthy (rather pale), and no perforation visible. A stream of water was passed through the rest of the canal for the purpose of ascertaining the existence of an opening, through which the worms must have escaped into the cavity of the abdomen. About the middle of the duodenum such an opening was found (through which the water issued in a tiny stream), about the size of the middle of the body of a full-sized lumbricus, perfectly round, with smooth edges, the lymph on the peritoneal surface extending quite up to its margin. The mucous membrane of the canal throughout was paler than natural, otherwise perfectly healthy; there was some little vascularity in the neighbourhood of the perforation, but to no marked degree. At this part, but below the opening, were found three more worms (making in all thirteen). The bladder was empty and contracted; the other organs were healthy. The large intestines contained hardish lumps of pale yellowish-colored fæcal matter.

There being no evidence of disease in the intestinal canal, beyond what has been mentioned, the probability is, that the worms caused irritation and local inflammation in the canal, ending in ulceration; some of the

worms, as well as the contents of the intestine, escaping through the opening into the peritoneal cavity, and setting up general peritonitis.

SCROFULOUS DISEASES OF THE EXTERNAL LYMPHATIC GLANDS:

THEIR NATURE, VARIETY, AND TREATMENT.

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III.—TUBERCULOUS DISEASE OF THE EXTERNAL LYMPHATIC GLANDS.

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III. In adverting to the pathology of tuberculous glands, it was stated that the period at which softening and suppuration occur is influenced by certain conditions which can generally be traced to constitutional and local causes. It was further observed that, although suppuration is a destructive process, it must, nevertheless, be sometimes considered a favourable result, especially when cicatrisation follows, and the general health improves.

Suppuration having led to the destruction of a gland, it is a point for consideration, not merely whether direct surgical treatment should be adopted, but of what such treatment should consist.

From the earliest periods in the history of this disease, it has always been a question, when a lymphatic gland has become disintegrated by the formation of abscess, whether an artificial exit should be made by the surgeon, so as to afford relief, and save the complete destruction of a portion of the investing integument; or whether natural processes should alone procure the elimination of the foreign material? My own practice is to treat a glandular abscess, simple or tubercular, much in the same way as the generality of surgeons treat purulent collections in cellular and other tissues. I am convinced that a judicious resort to surgical means not only saves much suffering and cuts short a troublesome process, but prevents that amount of deformity and disfigurement which so frequently follow the unassisted destruction of a tuberculous glandular abscess, and the subsequent closure of its walls.

During the progress of suppuration, local applications should be applied with extreme discretion. When inflammation renders the affected glands more than ordinarily painful, fomentations and poultices may be of use; but they are productive of more harm than good, when the destructive changes are free from such complications. In the treatment of glandular abscess, it is all important to prevent the surrounding areolar tissue from becoming too extensively involved; and, for this reason, it has been recommended to continue the local application of iodine, as (to use the words of a practical writer on scrofula) "it tends to circumscribe suppuration, and prevent the implication of the cellular tissue surrounding the glands, which, if left to itself, generally becomes involved to a considerable extent." The advisability of affording surgical assistance in the generality of cases of glandular abscess being admitted, the following methods may be briefly considered.

a. Caustics. The most distinguished of all modern authorities on scrofulous diseases who recommends the treatment of suppurative tuberculous glands by means of caustic, is M. Baudeloque. This surgeon advises that glandular abscesses should be opened by means of a caustic composed of equal parts of quicklime and caustic potash made into a paste with spirits of wine, and that all the implicated tissues should be destroyed, so that subsequent healing may be satisfactorily accomplished. (*Op. cit.*)