DYSPEPTIC BACKACHE

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Not infrequently the back is the site of a pain which at times may be very disabling. This is well known to occur in various spinal conditions involving the skeletal structures. It is also recognized as a feature at times of gynaecological disorders, organic nervous diseases, and states of anxiety and hysteria. Much less appreciated is the fact that backache may be caused by various intra-abdominal lesions. Indeed, as Yaskin and Finkelstein (1944) have emphasized, in some cases vague back pains may be the earliest manifestation of grave abdominal disease. The first description of this association has been attributed by Fagge (1886) to Cruveilhier (1829), who observed, according to Major (1945), that:

many patients complain more of a spinal point than of an epigastric point of tenderness.

Despite such early recognition, the association of backache with dyspepsia is often overlooked. It is easy to understand such neglect in contrast to more definitive and impressive symptoms such as haematemesis, vomiting, anorexia, or flatulence. Some reference to the association has been made by Tumen and Yaskin (1946) and by Morrison (1939). The present report seeks to clarify the situation in which dyspeptic backache may arise—as the only or predominant symptom, or as an additional feature in the presence of obvious gastro-intestinal symptoms.

Case Reports

Case 1, doctor, aged 41, complained of pain in the back of 10 weeks' duration, which had arisen after an attack of influenza. This pain was situated paraspinally in the region of the T9 and 10, was very severe, and was worse on the right side. It had been present constantly with numbness and tingling both in the back and front segmentally. Exacerbations occurred in which the pain radiated up the back to the scapular region and round to the front in girdle fashion. The patient thought he was suffering from fibrositis or osteo-arthritis of the spine. He also indicated that others had considered his pain to be largely psychogenic. Examination showed that he was very distressed with pain, looking anxious and grey.

There was tenderness on palpation of the vertebrae and the adjacent inter-costal muscles in the region of the pain. No tender nodules were detected. In the abdomen there was slight tenderness on palpation of the recti and across the epigastrium. There were no other clinical abnormalities. On the second and fourth evenings after admission to hospital he had a haematemesis, with improvement following blood transfusion. On the sixth evening he had a massive melaena and succumbed rapidly.

Autopsy revealed a large chronic peptic ulcer measuring 4×2 cm. on the posterior and inferior walls of the duodenum, adjacent to the pylorus. Its base was formed by the pancreas; an eroded blood vessel lay in the floor of the ulcer. The stomach and the large and small intestines contained a large amount of altered blood, but were otherwise unaltered. There was no evidence of osteo-arthritis of the spine.

Case 2, brewery transport manager, aged 42, was admitted to hospital on November 25, 1948, his chief complaint being the severity of the pain in his back in the region of the lower thoracic vertebrae. The pain radiated up to the scapulae and down to the iliac crests, a few inches from the vertebral column on each side. Nothing relieved the pain, which kept him awake at night, unless he took sedatives. He also complained of irritability, lack of concentration, and indigestion for 6 months. He had been admitted almost 2 years previously with extra-renal (gastric) uraemia; at that time he had complained of severe lower thoracic backache and periodic post-prandial epigastric pain of 15 years' duration. A barium meal showed slight dilatation with delay at the pylorus. Examination showed his general condition to be good, apart from tenderness more marked in the lower thoracic posterior intercostal spaces than in the epigastrium. There were no gross abnormalities. He appeared to be rather introspective, resenting the lack of active therapy for his backache. The blood urea on November 26 was 113 mg. per 100 ml. In addition to a rising blood urea, he subsequently developed diarrhoea with dehydration, thrombophlebitis due to intravenous saline therapy, and later left lower lobar pneumonia complicated by empyema, which necessitated operation on January 12, 1949, and a long convalescence.

He was admitted to hospital again on August 10, 1949,

complaining of very severe pain in the back. The pain was situated in the region of the lower thoracic vertebrae, was sharp and frequently woke him at night. It was constantly present with frequent more severe exacerbations. The pain often radiated over the back and occasionally through to the epigastrium. His long-standing and less marked periodic epigastric pain, however, did not radiate through to the back. The backache was said to be unrelated to respiration and to meals. During the exacerbations he liked to have strong pressure against his back. His general condition was good. There was tenderness in the epigastrium and under the costal margins, and in the lower intercostal spaces on the left side of the back and over the operation scar. He was treated with a strict peptic ulcer regime. For the backache he had applications of capsicum ointment and also radiant heat and massage. However, these measures produced little effect. The faeces gave positive occult blood tests. A barium meal showed a constant indentation of the prepyloric segment on the greater curvature, which was in the same line as an obstruction in the third portion of the duodenum which was causing a degree of duodenal ileus.

All this time he complained of severe backache. There was some doubt whether the pain was not being over-emphasized or was due to the effects of the previous surgical interference in the lower chest. However, in view of the long duration of backache, the poor response to local physiotherapeutic measures, and the long history of dyspepsia, it was considered possible that the pain was due to a peptic ulcer. A laparotomy on September 27, 1949, revealed an enormous ulcer arising from the lesser curvature in the prepyloric region; the wall of this ulcer was partly fundus of gall bladder and partly body of pancreas which was deeply excavated. The ulcer crater was 5 cm. in diameter and 5 cm. in depth; it was more like a diverticulum in shape, with a somewhat narrowed neck. Opposite to it on the greater curvature, there was a prestenotic diverticulum. Following incomplete excision and mobilization a partial gastrectomy of Moynihan type was carried out. Despite blood transfusions before, during, and after operation his condition deteriorated, and he died the same evening.

Case 3, engine driver, aged 45, complained on December 16, 1949, of severe backache in the region of the lower thoracic spines, which had been present persistently for a few days. In the previous 5 weeks he had received in-patient supervision and stabilization for diabetes mellitus. Examination revealed tenderness on pressure over these vertebrae and in the adjacent intercostal muscles, and it was thought that fibrositic nodules could be detected. He was advised to have deep massage at home with capsicum ointment. When he returned to the Diabetic Clinic on January 13, 1950, he stated that his back was much better; but he mentioned some slight discomfort from recent flatulence and epigastric pain at night, which responded to a bismuth carbonate carminative mixture. About 5 months later, on June 2, he complained of moderately severe pain in the epigastrium after food, and at night, together with flatulence. Relief was obtained

with a dyspepsia regime. On June 23, he reported again, complaining of the persistent backache which was overshadowing his indigestion. In view of the experience in the two previous cases, admission was arranged. He then developed, in addition to his epigastric pain, the ominous symptoms of anorexia and nausea, and a barium meal showed an irregular fixed and constant defect on the greater curvature of the stomach with absent peristaltic activity and interruption of the mucosal pattern. Laparotomy revealed a large inoperable nodular growth of the pancreas fixed to the aorta and inferior vena cava with secondary deposits in the mesentery. A biopsy confirmed an adenocarcinoma.

Case 4, female shop assistant, aged 16, attended complaining of pain in the back of 4 weeks' duration. Routine examination also ascertained "typical peptic ulcer" epigastric pain occurring periodically for 10 weeks. She had noticed that the pain in the back preceded and was actually worse than the attack of epigastric discomfort. Examination showed no abnormalities apart from tenderness in the epigastrium and in the lower thoracic region of the back. When seen some 4 months later she stated that after strict peptic ulcer treatment the epigastric pain was absent and the pain in the back had practically gone.

Case 5.—A personal conversation with another sufferer from duodenal ulcer dyspepsia elicited the information, that during a bout of severe indigestion the pain in his back was considerably more severe than his epigastric discomfort. So much indeed that he was forced to seek relief by applying a brick to the site of the pain in the lower thoracic region of the back and pressing this hard against a wall.

Other cases have been seen in which backache occurred with epigastric discomfort and pain. This back pain was as troublesome as the indigestion, and sometimes worse. In some cases epigastric pain radiated through to the back. Strict attention to a peptic ulcer regime produced alleviation of both symptoms.

Discussion

The aetiology of backache has been discussed by Cohen (1948), who described spinal, nervous, psychological, and visceral types. The latter variety might arise from two sources:

- (a) the viscus itself,
- (b) involvement of contiguous structures by spread of the disease from the viscus.

True visceral pain he affirmed as being due to abnormal tension of the muscular walls, deep, ill-localized, and unrelated to posture or movements of the spine, situated "usually anteriorly, but not infrequently in the back, which may be its only site". This view, apparently, combines the theories

of Ross (1888), Mackenzie (1892, 1893, 1909), and Hurst (1911). Rivers (1935), from the study of about 400 surgically verified cases, found that although most instances of uncomplicated peptic ulcer did not exhibit any shift of pain into secondary regions, the larger or more inflammatory ulcers did exhibit some tendency to produce pain referred to the back. Thus, he was "not convinced that pain transmitted over the splanchnic route cannot be projected into secondary areas". Hurst (1950) mentioned that severe pain boring through to the back sometimes may be found in cases of gastric and duodenal ulcer in which the ulcer is free from adhesions and the pancreas healthy. Here the conclusion of Ryle (1948) is interesting that visceral pain expresses a perturbation of visceral function (which may or may not be due to local organic disease), while the somatic phenomena generally express a structural lesion of the wall of the viscus.

Cohen (1948) considered the second source of visceral backache to be of greater importance. When the peritoneum of the posterior abdominal wall is involved by a visceral lesion, pain in the back is common and often severe; its surface localization corresponds to the area overlying the involved peritoneum. Morley (1931) believed that this was the only mechanism of pain referred to somatic structures. Branches of the sensory spinal nerves supplying the parietal peritoneum and various appendages of the posterior abdominal wall, he maintained, transmitted painful impulses *via* the spinal cord to the superficial branches. He denied Mackenzie's viscerosensory and visceromotor reflex theory of referred pain involving transmission *via* the splanchnic afferent nerves and spinal cord to the somatic system.

Rivers and Roodenburg (1944) summarized their views regarding the pathways of pain in abdominal diseases. They thought that probably the most important pathway normally was along sensory nerves in the splanchnic branches of the sympathetic nerves. The work of Ray and Neill (1947) and Bentley (1948) on patients with sympathectomies and splanchnic blocks respectively has confirmed that pain sensitivity from the stomach and duodenum is mediated by afferent fibres running with the visceral nerves. Most likely, unusually potent stimuli caused such pain to be referred at times into regions distant from their point of origin. The back pain was as a rule poorly localizable, although it maintained some segmental relationship, and might be felt bilaterally. Of equal clinical importance was the second pathway using spinal somatic nerves, following invasion of tissues contiguous to the viscera. The resulting referred pain was usually

localized accurately and corresponded segmentally with the intra-abdominal region invaded by the penetrating lesion. Such pain, however, usually indicated an extensive lesion. The third important route arose from metastases to the spinal column of malignant lesions originating there. In such instances the pain was usually boring, deeply located, bilateral, and constant.

Tenderness of vertebrae and muscles in gastrointestinal disorders was observed by Mackenzie (1909). Pertinent to this discussion is his description of a patient incarcerated in a spinal jacket because of extreme tenderness of the sixth and seventh dorsal vertebrae and a band of hyperalgesia of the skin around the left of the upper part of the abdomen; autopsy showed the presence of a carcinoma at the cardiac end of the stomach, but no spinal disease. The backache in Cases 1 and 2 was associated with pancreatic involvement from extension of the ulcer. This was undoubtedly of the second type, and the same was possibly true of Case 5. Case 3 showed involvement of the pancreas by neoplasm; it is of interest here that the earlier back pain was not so accurately localized as the later backache. Pain in the back as a symptom of carcinoma of the body of pancreas has been described by Bartels (1940) and Kattwinkel (1945); Berk (1941) reported its aggravation by recumbency or extension of the spine and its abatement by flexion of the spine.

In Case 4, in view of the short history, there may have been no extension of the ulcer. Probably corresponding are the two cases of Rivers and Roodenburg (1944), in which the onset of lumbar pain and occasional bloody stools occurred, in one case 2 years and in the other 6 months, before admission to hospital for perforating carcinoma of the sigmoid and of the rectum. In diaphragmatic hernia, Dunhill (1948) noted that the pain frequently extends through the chest to the back.

In many cases dyspeptic backache is by no means a minor symptom to the patient. Sometimes it is the presenting or only complaint, as in Case 1, where it was remarkable that severe and incapacitating backache was the only symptom in an illness which terminated so dramatically with the profuse melaena. At other times the backache may be so severe as to overshadow the other features. This was so with Case 2 during the second and third periods in hospital, with Case 3 while attending the diabetic clinic, and with Case 5 during exacerbations. In other cases the backache occurs with the other manifestations of indigestion, often of similar severity. This must have been so during most of the pre-hospital period of indigestion of Case 2. Several other cases have shown a similar association. In

still other cases backache undoubtedly occurs, but it is not mentioned by the patient who may consider it to be rheumatism and so seek separate advice and therapy.

It would seem that backache should always be kept in mind as a possible manifestation of diseases of the gastro-intestinal tract whether other dyspeptic symptoms are obvious or not. Enquiry should always be made regarding backache in dyspepsia, for, although it often indicates the presence of an extensive or complicated lesion, it seems that it may occur when the lesion is entirely intramural.

Summary

- (1) Backache of varying severity is described in five cases of organic dyspepsia.
- (2) The importance of the symptom of backache in gastro-intestinal diseases is discussed.
- (3) The mechanisms of production of this symptom are discussed.
- (4) The presence of backache in conditions in which the lesion is entirely intra-mural without extension to contiguous structures is noted.

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Courbature dyspeptique

RÉSUMÉ

- (1) On décrit les douleurs de reins d'intensité variable dans cinq cas de dyspepsie organique.
- (2) On discute l'importance de la courbature en tant que symptôme dans les affections gastro-intestinales.
- (3) On discute le mécanisme de la formation de ce symptôme.
- (4) On note la présence de la courbature dans des conditions dans lesquelles la lésion est entièrement intramurale, sans s'étendre aux structures adjacentes.

Lumbalgia dispeptica

SUMARIO

- (1) Se describe dolores de riñones de intensidad variable en cinco casos de dispepsia orgánica.
- (2) Se discute la importancia de la lumbalgia como síntoma en las enfermedades gastrointestinales.
- (3) Se discute el mecanismo de la producción de este síntoma.
- (4) Se nota la presencia de la lumbalgia en los trastornos en que la lesión es enteramente intra-mural, sin extenderse hacia las estructuras adyacentes.