

## INTUSSUSCEPTIONS OF THE DYING.

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MY attention was attracted to the occurrence of this condition by an article in the *Journal of Comparative Pathology*, Vol. XVI., page 154. In that article it was stated that "intussusceptions of the dying" had not been recognised by the veterinary profession; since then I have had the good fortune to come across a case of this condition while making an autopsy on a cross-bred English terrier pup, which died in a fit shortly after being admitted to the infirmary for treatment for distemper. The condition noted was exactly similar to that described, viz., the intussusception was multiple (four in number, each about eight inches long), very easily reduced, no signs of inflammation or any change whatever, and they were in the small bowel; in fact, the only respect in which they did not quite accord with description was that they were descending and not ascending.

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## LUMBAR TUBERCULOSIS, WITH FRACTURE FOLLOWING, IN A HEIFER.

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I AM induced to publish this case in the belief that the lesions disclosed on *post-mortem* will prove of pathological interest.

The *subject* was a patient of mine a few months ago—a polled Angus (Ballindalloch) heifer, suckling her first calf six weeks old. Kept in a roomy loose box; all right at night, and found next morning unable to rise. There was no history or sign of an accident, animal in capital condition, and enjoyed previous good health.

*Symptoms.*—Complete paraplegia; no control over hind limbs, though able to move the fore part of body; loss of sensation together with loss of voluntary motor power extending backwards from the posterior lumbar vertebræ; paralysis of bladder, with retention of urine; rectum packed with soft fæces, and tail quite flaccid. Constitutional symptoms were absent, respirations, pulse, and temperature being practically normal, and appetite good. Conjunctival mucous membrane a little injected. Manipulation of the loins and hind legs gave negative results.

*Diagnosis.*—The complete loss of nerve force and the sudden onset of the symptoms made me suspect fracture; there appeared to be pressure paralysis from some such cause. A fairly definite, though by no means a positive, diagnosis was arrived at by a process of exclusion, other possible causes being eliminated. After emptying the rectum and passing the catheter, the cow was raised in slings for two or three minutes; she, however, hung helplessly, knuckling over completely at both hind fetlocks. On rectal examination, a firm fixed tumour was detected in the sub-lumbar region, immediately beneath the spinal column.

*Prognosis.*—Very doubtful; pressure on the spinal cord, and chances of recovery very poor. The owner, however, decided on treatment, the animal being a valuable pedigree one and a favourite.

*Treatment* followed the usual lines. Attention to details of nursing, removal of urine and fæces, enemas, the administration of an oleaginuous purge, etc.

*1st week.*—Condition remained unaltered ; she fed well, chewed her cud, and gave a fair amount of milk. Two drachms of nux vomica were given twice daily, the spine and hind legs being hand-rubbed and stimulated.

*2nd week.*—Involuntary discharge of urine ; by and bye urination and defæcation performed quite freely ; tail a little stiffer, though at no time was the anæsthesia of the hind parts in the least overcome. Half-ounce doses of nux vomica powder and a few doses of the tincture with spt. amm. aromat. were now given, alternated with iodide of potassium, and a biniodide of mercury blister was applied to the spine.

*3rd week.*—Cow again raised in slings ; increasing weakness, appetite less hearty ; restlessness and grinding of the teeth ; hind quarters wasting very visibly, and, in spite of precautions, some gangrenous ulcers appearing on the teats. The nux vomica, being pushed far enough, was stopped, and a laxative administered. Owner at last consented to have her killed. This was done on the 23rd day, and a *post-mortem* was made immediately afterwards.

*Autopsy.*—All the important organs, lymphatic glands, and serous membranes, together with the spinal column, were subjected to a close examination. A few mesenteric glands, four in number, were found enlarged, more or less indurated, and caseous. The largest, the size of a crab apple, showed calcareous changes ; the others, much smaller, showed a few yellow caseous tubercles dotted over the section. Glands of large intestines, mucous membrane, and wall of small intestines healthy. A tuberculous firm fibrous growth was exposed in close connection with the bodies of the last two lumbar vertebræ, in size rather larger than a goose's egg, mainly fibrous in structure, but partly infiltrated with lime salts, and showing several areas of cheesy caseous matter close to the bone. By staining a film (smear) obtained by rubbing a cover-glass over the cut surface, I was able, fortunately, to detect tubercle bacilli.

The lumbar vertebræ were isolated, and a longitudinal section made down the centre with the saw. It was now apparent that a fracture existed of the body and arch of the 5th bone, close to its articulation with the 6th ; these two vertebræ were the seat of a rarefying osteitis, and the following changes were presented : Softening of the bone, dilatation of the spongy spaces and infiltration with yellowish caseous material ; ulceration and partial removal by absorption of the inter-articular cartilage, which, as usual, resisted the disintegrating process longer than the osseous vertebræ ; and, lastly, suppuration in connection with the spinal meninges. The absence of any attempt at the formation of new bone, and the close connection of the above-described growth with the diseased spinal bones, were points worthy of note ; there was, in fact, no line of demarcation, the disintegrated deeper part of the growth passing imperceptibly into the softened mass of bone. The compression of the spinal cord to the diameter of a slate pencil in the centre of the diseased area was very striking.

Right kidney appeared a little enlarged, firmer than normal, with greyish slightly-raised areas under the thickened capsule ; pale on section, and raised areas showed as summits of fibrous bands running

through cortex into medulla. Horizontal sections stained for structure and bacilli respectively showed that the changes were those common to interstitial nephritis, no tuberculous elements being present. Some extravasation of blood was noted behind the kidneys, together with a swollen œdematous condition of the lumbar lymphatic glands on both sides; the sacral group and other important glands in the abdomen and chest were, however, to all appearances absolutely healthy.

I regret that the cord was not examined in a fresh state.

*Remarks.*—The tuberculosis appeared to have been pre-existent to the fracture, and to have acted as its predisposing cause; in other words, the fracture, with resulting pressure on the spinal cord, was evidently a sequel to the disease in the bone. It is obvious that a very slight force would suffice to bring about the fracture with the amount of cartilaginous and bony disintegration present. It is somewhat remarkable that so little tuberculosis existed in other organs, the glands of the mesentery and the vertebræ being alone affected, so far as I could determine with the naked eye.

The somewhat doubtful or suspicious condition of the lumbar glands has been noted above.

In this respect, *i.e.*, the scarcity of tuberculous lesions, I think the case may fairly be regarded as an exceptional one. I may be pardoned for quoting Professor M'Fadyean in this connection: "Tuberculosis affecting either the osseous system or the articulations is comparatively rare in cattle. . . . The bones most commonly affected are those of the spine, and the disease is generally associated with extensive lesions in the abdominal and thoracic organs and viscera. Probably it is generally a local tuberculosis, due to infection by the lymphatic system of vessels."<sup>1</sup>

It is always interesting and instructive to trace the course of infection in such cases. The entire absence of any tubercular foci in the lungs puts auto-infection out of account. The bacilli appear to have gained access with the food or water, and to have passed straight through the intestinal wall without affecting it; thence to the mesenteric glands by way of the lacteals, and from there to the lymphatics of the spinal column.

I had lately an opportunity of examining some specimens of tuberculosis of the spine in children, and their resemblance to this case struck me very forcibly. I was informed that in special cases in the human subject it is quite unusual to find much tuberculous disease in other parts of the body.

<sup>1</sup> "Journ. Comp. Path. and Therap." September 1898.