Neurogenic Appendicopathy – A relevant differential diagnosis of appendicitis

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OBJECTIVE
Neurogenic appendicopathy is rarely considered as a differential diagnosis of appendicitis. The prevalence of the disease is assumed to be 10-20%. In patients with typical symptoms and macroscopically inconspicuous appendix (“negative appendectomy”), histopathological changes of neurogenic appendicitis could be detected up to 57%. Despite the frequent occurrence of neurogenic appendicopathy, the pathogenesis remains unclear. Serotonin, the neuropeptide substance P and the vasoactive intestinal peptide with their pronoziceptive effect and chemotaxis were attributed to be a cause of pain. The symptoms are variable and sometimes clinically indistinguishable from appendicitis. Neither sonomorphologically nor in the CT scan pathognomic diagnostic features have been described so far. A macroscopically inconspicuous appendix is typically found, only in the obliterated form a thickened tip of the appendix may occur. Therefore, the removal of the appendix should be done with regard to the frequency of the disease. The diagnosis is usually made histopathologically. Immunohistochemical staining with S-100 can be used to visualize nerve cell proliferation and to prove the disease. We report a case of right-sided abdominal pain for three years but without any abnormalities in laparoscopy.

METHODS
A 56-year-old man complained of abdominal pain in the right lower quadrant intermittend for three years. Diagnostic laparoscopy was performed to treat umbilical hernia three years before without macroscopically conspicuous findings of the appendix. After persistence of pain the patient underwent a laparoscopic cholecystectomy due to gallstones one year later. At the time of the last appointment the CT scan did not reveal any morphological changes. Another laparoscopy showed just a slightly thickened appendix and appendectomy was performed.

RESULTS
Histopathology revealed a neurogenic appendicopathy. The patient was free of complaints immediately after surgery and eight weeks later.

CONCLUSION
Neurogenic appendicopathy, as a differential diagnosis of right lower abdominal pain, is difficult to distinguish clinically from appendicitis. Macroscopically, the disease cannot be reliably differed from normal findings. Therefore, in the case of pain in the right lower abdomen and inconspicuous findings in laparoscopy, an appendectomy should be performed for histopathological evaluation.

Fig. 1: Magnification 40x, hematoxylin and eosin staining shows obliteration of the appendix with neurogenic proliferation.

Fig. 2: Magnification 40x, the immunohistochemical staining with positivity for S-100.