The laparoscopic neurolysis of the pudendal nerve for the therapy of the Alcock’s Canal Syndrome after sacrospinous fixation for vaginal prolaps

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Introduction

Since improvement of the telemedicine allows magnification effect and optimal conditions of dissection even in the deepness of the pelvic retroperitoneum, laparoscopic surgery is becoming one of the most useful and important instrument for learning the pelvic retroperitoneal anatomy. Laparoscopic exposure of all pelvic nerves became feasible routinely and use of Laparoscopic Neuronavigation - LANN technique - permit intraoperative assessment of the motoric functionality of the exposed somatic and autonomous nerves. Thus not only new basic knowledge concerning the neuro-functional pelvic anatomy in women were won but also a specific neurofunctional cartography can be elaborated in short surgical time in each patient: „Parasympathetic nervesparing technique“ in radical pelvic surgery is based on this kind of exposure and sparing of the pelvic splanchnic nerves during transection of the parametries for reduction of postoperative functional morbidity of the bladder and of the rectum. If laparoscopy allows sparing of the pelvic nerves, it allows also direct surgery on it too: In our first serie of „laparoscopic pelvic neurosurgery“ we shows our first results for the laparoscopic neurolysis of the sciatic nerve in patients with an extended infiltration of the obturatoric fossa by severe endometriosis. In the present work, we shows an other indication for laparoscopic neurosurgery, the laparoscopic neurolysis of the pudendal nerve in patient with „Alcock canal syndrom“ secondary to vaginal sacrospinous fixation after Amreich-Richter for genital prolaps.

Material and methods

Four consecutive patients were send to our institution with suspicious of lesion of the right pudendal nerve after sacrospinous fixation for vaginal prolaps for surgical therapy. All four patients presented since years the typical symptomatology of the „Alcock Canal syndrom“: Sensation of burning or painful sensation of a foreign body in the right perineal region with paroxysmus sitting on a chair but not on the toilet. This pain improves lying down or
standing up and the patients are normally pain free during the night. During the rectovaginal examination the palpation of the pudendal nerve close to the ischial spine leads to unbearable pain while the infiltration of this region with a local anaesthetic leads to immediate dispersion of the pain. A hypo – or anaesthetic in the perianal or perineal skin region can accompany the whole symptomatic.

For laparoscopic exposure of the pudendal nerve we use the transperitoneal approach similar to the technique of laparoscopic pelvic lymphadenectomy: After opening the retoperitoneal space between the homolateral adnexa and the external iliac vessels, the interiliac fett-lymph-tissue are detached by blunt dissection from the lateral pelvic wall while the obturatoric nerve and its vessels are dissected. The lymph nodes are not freed neither from their distal, nor proximal nor medial attachment in order to no disturb the normal lymph drainage of the pelvis and of the genital organs. The pudendal nerve is exposed in the infrapyriform compartment of the sciatic foramen caudaly and ventrally to the vascular part of the cardinal ligament: Exposure of its emergence out of the sciatic nerve requires mostly transection of the obturatoric vein which presents no any difficulty or risk for postoperativ morbidity. For further dissection of the pudendal nerve, transection of the Ligamentum sacrotuberalis is done directly ventrally the pudendal nerve while fortunately the pudendal vessels are running behind of it by the laparoscopic view. By further transection of the ischiococygeal muscle, exposure of the pudendal nerve can be carried on about 3-4 centimeters downwards and confirmation is obtained by using its electrostimulation. In our four patients, we founded fibrotic tissue surrounding the nerves just at the level where the nerve disappeared lateraly to the sacrotuber ligament over a distance from about 1cm; This fibrotic tissue surrounding the nerve was resected by sharp dissection and optimal magnification of the situs.

For the procedure we needed a mean of 71 minutes for the exposure and neurolysis of the pudendal nerve and no any intra- or postoperative complication occurred. All four patients reported the day after the procedure loss of pain without any dysfunction of the sphincters. All patients leaves our institution painfree between the second and the fourth postoperative day.

**Discussion**

The „Alcock’s Canal Syndrom“ was first described in 1987 by Amarenco and has remained relatively unknown. In this pathology the pudendal nerve is irritated but not destroyed so the the pain symptomatic is in the forefront while none or few motoric failures can be expected. The classic etiology of this syndrome is the chronic compression of the nerves in the Alcock’s canal by a bicycle saddle for cyclists or by continual sitting down in
certain occupational groups. This syndrome should interest gynecologists as 70% of the patients affected are female and then the obstetric causes belong to the first etiologies:

- Compression of the nerves through a postpartal haematoma of the ischiorectal fossa.
- Idiopathic fibrosis of the pudendal canal, secondary local haematoma or infection.
- Stretching of the nerve against the pelvic wall by the head of the child during birth. The birth of children over 4 kg, the duration of the expulsive stage over 30 minutes and especially a forceps delivery are classical risk factors for this etiology.

A further frequent etiology for the Alcock’s canal syndrome is the direct suture of the pudendal nerve or its irritation through a postoperative haematoma formation or infection of the Alcock’s canal or ischiorectal fossa after a sacrospinal fixation of the vaginal stump by Amreich-Richter. The classical pain symptomatic in the right gluteal region described by the patients after this operation can normally be traced back to tension on the sacrospinal ligament. When this pain does not lessen or increases after a couple of weeks or worsens while sitting, one must consider the Alcock’s canal. The pelvic radiotherapy – especially brachytherapy – can in the long term lead to an Alcock’s canal syndrome normally accompanied by stool or urine incontinence of a neurogenous type.

The therapy of the Alcock’s Canal Syndrome depends on its etiology. The therapy of choice following a sacrospinal fixation of the vaginal stump is the removal of the suture with a neurolysis of the pudendal nerve. When there is haematoma formation, abscess formation of the ischiorectal fossa, the fossa is also dissected and the pudendal nerve is freed. In other cases the local infiltration with cortison is the first possible therapeutic option. When there is no improvement in the symptomatic a neurolysis of the pudendal nerve is performed independent of its etiology which frees about 70% of the patients from their illness. Classical surgical approach of the pudendal nerve for therapy of the Alcock canal syndrome are using the gluteal approach ().

Discussion of the paper of R. Robert

Referents


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