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Therapeutic Hymenotomy with Hymenoplasty/Hymenorrhaphy followed by Pain Management with Anesthetic Nerve Blocks: A New Approach to Resolve Introital Dyspareunia

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Abstract

Some cases of dyspareunia, called also painful intercourse, are due to a congenital narrowing of the vaginal introitus. In this case, we can talk about introital dyspareunia. A non-surgical treatment is currently doomed to failure. On the other hand, the surgical approach alone is often unable to resolve the problem. As a matter of fact, many repeated attempts to obtain an intercourse provoke a chronic allodynia/hyperalgesia especially in hymenal caruncles around the mucous membrane lining the vaginal opening. Consequently, it is first necessary to enlarge the vaginal introitus to correct the anatomical narrowing; and, later, to practice anesthetic nerve blocks in the pelvic-perineal area to desensitise the hymenal residues. Fifteen consecutive selected patients affected by chronic hymenal dyspareunia were submitted to such surgical approach followed by monthly sessions of appropriate anesthetic nerve blocks. In all cases, the results were completely successful in six months.

Introduction

Dyspareunia is a very discomforting condition which not only involves a physical sexual pain but especially impairs psychological and emotional wellbeing of women and her partner. In this condition, at every attempt of vaginal penetration sexual pleasure is immediately blocked and transformed in excruciating painful sensation. Unfortunately, pharmacological support and local treatment with anti-inflammatory creams offer only relief by means symptomatic effects (Vincenti E & Vincenti H, 2021). Both history of past sexual events, such as first intercourse, and actual ordinary condition may induce a suspect of the true origin of the dyspareunia, often caused by anatomical narrowing of vaginal introitus due to hypertrophic hymen; an accurate medical examination of the vulva and the vagina, especially of its opening, may confirm such a diagnostic hypothesis and suggest a simple surgical anatomical correction. A further diagnostic and prognostic factor may be obtained by performing an easy test with use of anesthetic solution injected into submucosal tissues of hymen: if positive, the role of hymenal caruncles is confirmed and the surgical correction suggested.

At this point, the patient is informed about the possibility of complete recovery through the association between a small

outpatient surgery of hymenetomy with hymenoplasty and subsequent monthly sessions of anesthetic nerve blocks of desensitisation of the vaginal opening. In fact, surgery may offer an anatomical enlargement of vaginal opening but not a painless penetration in absence of the elimination of chronic local allodynia related to peripheral neuropathy (Bohm-Starke N et al, 1998; Bohm-Starke rt al, 1999; Bornstein J et al, 2004; Vincenti E & Graziottin A, 2004; Vincenti E & Graziottin A, 2006). Our wide clinical experience on treatment of chronic vestibulitis by means of repeated anesthetic nerve blocks demonstrates that such a therapy can modify both cerebral altered connections and peripheral free nervous fibers, restoring a normal peripheral sensitivity.

Materials and Methods

After previously signed informed consent, the patient is admitted to outpatient surgery under light sedation with iv diazepam (2.5 - 7.5 mg) and local anesthesia with bilateral blockade of the pudendal nerves associated with infiltration under the mucosa of the hymen caruncles by using 0.5% bupivacaine (about 10 ml as total). Oxygen (1-2 l/min) is delivered by nasal device and cardiorespiratory standard parameters are monitored with pulsioxymetry and side stream capnography. An intravenous indwelling cannula for anesthesia with injection port with non-returned valve for intermittent medication is placed in a peripheral vein and connected to an infusion way for saline administration. After lithotomy position, the surgical area is disinfected with iodophor solution and delimited with sterile wipes. Each hymenal caruncle to treat is identified, stapled at the ends by two curved Pean forceps and cut in the middle with scissors. Vicryl Rapide absorbable 3-0 or 4-0 is used to suture.

At the end of surgery, two fingers of the operator are introduced in vagina to test the result obtained. Before introducing an appropriate intravaginal hemostatic sponge (to be maintained inside for about 20 minutes), an eventual bleeding is treated. In absence of complications, the patient's discharge is allowed after another 30 minutes. After about 3-4 weeks, a session of anesthetic nerve blockade is performed: in particular, impar ganglion, sacral nerves (from S2 to S5), pudendal nerves (Vincenti E & Graziottin A, 2006) and, finally, hymen mucosa infiltration. Bupivacaine (0.25%) is used in a total volume of 30 ml (75 mg).

Bupivacaine is our favorite local anesthetic both for its greater potency and duration of the effect, and for its anti-inflammatory action (superior to the other local anesthetics), very useful when injected into peripheral tissues dominated by chronic inflammation, as is the case of allodinic hymenal caruncles.

Results

Fifteen out of seventeen patients agreed to undergo hymenetomy with hymenoplasty. The main data relating to patients undergoing surgery are: average age of 33.3 years; 11.5 years as average time elapsed between the beginning of dyspareunia and surgery; pain score related to the hymenal touch (minimum and maximum) before surgery: 54-86; average number of sessions of nerve blocks after surgery until healing: 5.1; and, finally, average number of months to complete recovery after surgery: 6.3. No side effects occurred. Only one patient took 400 mg of ibuprofen in the immediate postoperative period. All surgeries were performed on Saturday and in all cases each patient was able to resume normal work activity on Monday. All patients expressed complete satisfaction about the surgery and the nerve blockade sessions.

Discussion

The pathophysiologic causes of painful hymenal ring in introital dyspareunia are based both on increased density of the free ending nerves in mucosal tissues and in their more superficial disposition (Bornstein J et al, 2004). This altered histologic picture is associated to allodynia and hyperalgesia, as result of a particular neurologic hardware established by chronic inflammation due to hyperactivation of mast cells (Zanotta N et al, 2018), under frequent and aggressive mechanic stimulations, such as, for example, repeated attempts of vaginal penetration. For this reason, it is first necessary to surgical widen the hymenal ring and then to desensitise the mucosa through periodic sessions of anesthetic nerve blocks (Vincenti E & Graziottin A, 2003; Vincenti E & Vincenti H, 2021). On the other hand, the anesthetic blockade of impar ganglion, sacral nerves and pudendal nerves assures a temporary inactivation of afferent inputs both autonomic and somatic to the central nervous system, and, as a consequence, a block of the nociceptive peripheral firing from painful vulvar area. In other words, it occurs a temporary functional arrest of the state of alarm due to hymen pathology. But, if

this block of nociceptive information is periodically carried out, it happens a reset of abnormal cerebral connections, and a restoring of the normal processing of the afferent inputs coming from periphery. Thus, anesthetic nerve blocks carried out with bupivacaine after reparative surgery are able, acting in "software mode", to restore the functions of the brain "hardware" (Vincenti E, 2014).

In conclusion, a correct diagnosis of origin of dyspareunia due to introital vaginal penetration and the associated role of hymenal allodynia can suggest the complete solution of problem by acting in two stages: first, hymenal surgery, second, repeated anesthetic nerve blocks. Our clinical positive experience seems to corroborate this new approach to the treatment of introital dyspareunia.

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