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IMPLYING "FAST-TRACK" PROTOCOL FOR HYDROCELE SURGERY IN A TERTIARY CENTRE

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Introduction

"fast-track surgery" was developed in the early 90s when a group of researchers stated different approaches to improve postoperative recovery in patients undergoing elective surgery of note among which are the value of patient counselling and taking the patient as an integral part of the postoperative recovery time, being the main goal of this concept a reduction in the length of hospital stay and minimization of inherent complications of surgery.

although fast-track surgery was initially described in colo rectal disease, the good outcomes obtained with this approach has resulted in its practice by other specialties, such as anesthesia, thoracic surgery, gynecology, urology, where this concept has shown an improvement in postoperative recovery[1-2], using protocols which advocate a multimodal approach, combining postoperative procedures based on scientific evidence in order to reduce surgical stress and improve postoperative recovery[3-4]. One of the methods used to achieve these short-term stays in hospital is precisely this new concept of "fast-track surgery"[7], as an expression of a coordinated effort that combines modern concepts of patient education with new schemes of analgesics, anesthetics and minimally invasive surgical techniques [5-6].

Materials and methods

From year 2016 to 2019, 1000 patients have undergone hydrocelectomy in a strict outpatient surgery setting.

To perform this study, we compared two groups of patients, group 1 of patients underwent hydrocelectomy following the fast track protocol, with data collected prospectively, and group 2 of patients underwent hydrocelectomy before multimodal recovery protocol was taken in to consideration (classical group), where patients were treated under the classical concepts of hospitalization and surgery with general or spinal anesthesia. In this group data were collected retrospectively.

Between january 2018 and january 2019 we have performed a total of 828 hydrocelectomies. 372 patients aged between 14 and 89 years (mean 46) underwent hydrocelectomy following the fast-track group. Hydrocele was in the left side on 232 patients, in the right side on 106 patients, and bilateral in 34 cases. Regarding physical status of patients, according to the american society of anesthesiologists criteria, 186 patients ASA I (50%), 111 patients ASA II (29.8 %), and 75 stable patients ASA III (20.2 %) were included in the fast track group.

A detailed history taking and a complete examination with abdominal and inguino scrotal ultrasound was performed during the opd visit. Preanesthetic assessment was done and information about the procedure was given, informed and signed consent in all cases. In addition a leaflet explaining the process was given to the patients (figure 1 and 2) which included all pre and postoperative instructions as well as a telephone number for resident doctor if any post operative or pre operative complications is there.

Once the preanesthetic assessment was complete, patients were informed the date for the procedure.

Figure 1: EXPLANATORY LEAFLET

Preoperative recommendation		Post operative recommendatioan	
1	Eat a light dinner the night before of surgical procedure. Then nil by mouth after 10pm	1	Eat a soft meal during the first 24 hrs after the surgery. Do not drive. Do not drink alcoholic beverages.
2.	The day of the procedure take prescribed with some medication)	2.	You may have pain in the surgical site. You will take the analgesic prescribed during the first 48 hrs.
3.	To minimize the risk of wound infection take a shower the morning of the day of surgical intervention. Inguino scrotal region will be shaved pre operatively.	3.	You may have a little rise in body temperature (100, 4º f). It's normal during the 48 - 72 hrs. If you have a higher body temperature, let us know.
4.	If you use dental prostheses or intraocular lenses, take it off before coming to the hospital. Wear comfortable clothes and a tight underpants.	4.	You don't have to remove the suture. It's an absorbable suture. Stitches fall usually in a week, but they can fall even after(until 1 month)
5.	Take your usual medications	5.	Wear a tight underpants during the first 2 weeks
6.	If you have had any changes in your health, let us know(fever, common cold, etc)	6.	You may have scrotum tightened swelling during 1 or 2 months, but it is a transient state, getting back to normal at 3rd month after surgery
7.	Come to the hospital with a guardian. You cannot drive cars either before or after the procedure.	7.	If you have any situation (i.e. bleeding, soakage of wound) go to the emergency department or call us on

Hydrocelectomy was performed in all patients using the following surgical sequence:

local anesthetic cream (lidocaine 2.5 w/w + prilocaine 2.5 w/w) was topically used in the shaven scrotum and groin area approximately half hour before surgery. Infiltration of the spermatic cord with local anesthetic (10 - 20 ml of lidocaine 1%), is done by clamping the spermatic cord at level of the root of scrotum. In cases of giant hydroceles it is advisable to infiltrate the cord in the same place, fixing it to the pubic bone. Also scrotal skin was infiltrated where the incision was performed. A transversal incision of 3 - 4 cm was performed, trying to preserve the scrotal vessels. Exposure of the tunica vaginalis and aspiration of fluid until the sac get a size that allows be removed through the small skin incision. Longitudinal incision of the sac and plication of tunica-vaginalis around the entire circumference with absorbable suture or eversion was performed. Introduction of the testicle in the scrotum and closing wound with absorbable suture. No any intrascrotal drainage tubes were used in any patient. In all cases antibiotic prophylaxis was performed using a single dose of 1gm cefotaxime i.v .

Instructions were given. After surgery, all patients remained under observation about 1 hour until discharge. Patients received, by resident doctor, postoperative phone call the evening of the intervention and the next morning to control their postoperative conditions and to reassure the patient with inattentive feelings that could cause outpatient surgery. If necessary, the patient is referred to the our trauma centre.

The postoperative medical visits are performed a week after surgical procedure, at 1 month and at 3 months later. At opd we performed a short anonymous survey about satisfaction degree about the treatment received.

To compare the results with a control group of patients operated classically group by inpatient surgery and spinal or general anesthesia (classical group), retrospectively studied patients undergoing hydrocele during the prior to the using fast-track protocol. They were performed 372 hydrocelectomies patients aged between 18 and 82 years (mean 42). Hydrocele was left at 204, right in 148 and bilateral in 76 cases. Regarding the physical state, 261 of them were qualified ASA I (60.98%), 128 ASA II (29.90%) and 39 ASA III well compensated (9.11%).

In classical group, 428 patients underwent surgery under spinal anesthesia and under general anesthesia and they all were hospital admitted, with a mean length of stay of 1 ± 0.8 days (range 1- 3). Regarding statistical analysis, the data are expressed with the mean, standard deviation and range. The data was analysed using SPSS 19 (spss inc., chicago, il). When it was necessary to compare groups, the student-t test was used, considering statistical significance a $p < 0.05$. When we compared qualitative aspects, the chi-square test was used.

Results

All the patients from the fast-track group has undergone surgery with local anesthesia, however, in 60 cases (14%) it was necessary to add sedation through an infusion of propofol and remifentanil due mostly to the severe anxiety and pain symptoms in some patients.

The average time used in the surgical intervention in the fast-track group was 30 ± 9 minutes in the unilateral cases (range 15 – 45) and 45 ± 10 minutes in the bilateral ones (range 25 – 55). In the classic group, the time was significantly greater ($p < 0,005$), being the average 45 ± 15 minutes (range 40 – 70) in the unilateral hydroceles and 60 ± 15 (range 45 – 80) in the bilateral ones.

All the patients from the fast-track group were discharged after the intervention, with none of them requiring hospital admission because of immediate intra or postoperative complications. A total of 22 patients (5.9%) were attended in the emergency department during the first postoperative day, 12 of them because of intense pain in the surgical incision which was resolved increasing treatment regimen of oral analgesia with 2 of them adding anxiolytic treatment; the other 10 patients because of hematoma, where none of them required admission and surgical exploration.

Patients from the classic group, stayed in hospital, being the mean length of stay of 1 ± 0.8 days (range 1 – 5) with none of them presenting important complications, with the exception of 24 patients who received spinal anesthesia and required urethral catheterization because of acute post- operative urinary retention and 2 patient that required surgical exploration because of gross bleeding from wound. After discharged, 37 patients (8.6%) were attended in the emergency department because of pain and scrotum swelling which was resolved with minor analgesics and enzyme preparations, lacking of statistical significance when being compared to the other group.

Three months after the intervention, all of the patients presented a satisfactory evolution, with 360(97%) of the patients from the fast-track group answering the survey about the treatment received in the unit, where 316 (87.77%) rated it as "excellent", 40 (11.11%) "good", 4 (1.11%) "regular" and none (0%) "deficient".

Discussion

Hydrocele is easily diagnosed by physical examination, but ultrasound is often very useful for diagnosis of concomitant disease. Thus, in all of our patients a preoperative abdominal and inguino-scrotal ultrasound was performed. Mainly to rule out testicular tumor and hernia and other scrotal and testicular pathology as the cause of the scrotal swelling.

The standard treatment for hydrocele has always been surgical. Similarly, sclerotherapy has been an alternative to hydrocelectomy in high-risk surgical patients, or patients who have dismissed surgery as treatment[8]. However, some recently studies have been published advocating sclerotherapy as the treatment of choice instead of hydrocelectomy[9-10]. Several agents have been employed for this purpose, with different results reported depending on the agent used and the number of instillations performed, apparently dependent on the size of the hydrocele. Some authors[11] make a correlation be- tween the number of injections of sclerosing agent and the size of hydrocele, where the procedure needs to be repeated more than three times in hydroceles with a volume less than 500 ml. Moreover, sclerotherapy have a high incidence of side effects (postoperative pain, infection, hematoma, scrotal induration by granulomatous enlargement of the tunica) and a high rate of recurrence (usually multilocular and difficult to treat) and can cause epididymis obstruction, so it should be contraindicated in young patients in whom fertility is a priority. In addition, sclero- therapy is totally contra indicated in young patients where the existence of a communicating hydrocele is suspected. Worthy of note is a recent meta-analysis that concluded sclero-therapy have a high rate of long-term recurrence compared to hydrocelectomy[12].

We prefer lidocaine as a local anesthetic instead of other amide compounds, because of its lower cardiotoxic effect (if it were accidentally injected into the bloodstream), its faster anesthetic action and its less painful sensation during injection[13]. We prefer to make a transverse hemiscrotal incision following skinfolds and scrotal vessels, as it allows minimal bleeding and offers better cosmetic results (scarremains hidden by these folds). In case of bilateral hydrocele, we prefer a unique longitudinal incision on median raphe, because it allows us access to both hydroceles from a single incision. We always advocate making small incisions, because once the hydrocele is evacuated, if it was a large incision, it often become disproportionate. In our experience, with a 3 - 4 cm in length scrotal incision, even giant hydroceles can be solved.

Basically, there are three surgical techniques described for

hydrocele: lord's technique (vaginal plicature), jaboulay's technique (vaginal eversion) and andrews technique (vaginal resection). Whenever the tunica vaginalis is thin, lord's technique is the preferred procedure, because of tissue dissection is low, it provides less bleeding and edema and avoids the use of drainage tubes. In cases of enlargement of the tunica vaginalis we recommend andrews technique and the use of a drainage tube, because even if hemostasis were perfect, we must leave out the excess of transudate fluid that may occur[14].

Conclusions

Implementation of fast-track protocols in the surgical treatment of hydrocele shows reduction of hospital length of stay and decrease postoperative morbidity, improving the cost-effectiveness of the procedure. Almost all scrotal fluid collections can be resolved under local anesthesia in a strict outpatient setting. Nowadays hydrocelectomy under spinal or general anesthesia with hospital admission is an unnecessary overuse of health care resources and should be avoided. In a developing country like India it will help providing a better standard of care with reducing the cost of surgery and reducing the health care source usage in government set up.

REFERENCES

1. Fearon, K.C., Ljungqvist, O., Von Meyenfeldt, M., et al. Enhanced recovery after surgery: a consensus review of clinical care for patients undergoing colonic resection. (2005) Clin Nutr 24(3): 466-477
2. Ortega, S.M., Martínez, J., Júdez, D., et al. The results of implement- ing a fast-track protocol in radical cystectomy in a tertiary hospital. (2015) Actas Urol Esp 39(10): 620-627.
3. Moreno, P. Cirugía endocrina en régimen ambulatorio. (2006) Cir Esp 80(5): 273-274.
4. Ortega, J., Cassinelloa, N., Lledó, S. Cirugía tiroidea con menos de 24 horas de hospitalización. Resultados tras 805 tiroidectomías con- secutivas en un programa de alta precoz tipo fast-track. (2007) Cir Esp 82(2):112-116.
5. Ministerio de Sanidad y Consumo. Dirección General de Asegura- miento y Planificación Sanitaria. Cirugía Mayor Ambulatoria: Guía de Organización y Funcionamiento. (1993) Madrid.
6. Rodríguez, J.M., Rodríguez, R., Blanco, G. Cirugía Mayor Ambu- latoria en Urología. En: Porrero JL. Cirugía Mayor Ambulatoria 2ª Ed. (2002) Barcelona: Masson 311-333.
7. Development of a "Fast-Track" Protocol for Hydrocele Surgery (oct 2016) Víctor Navalón-Monllor2, Marco Sobrón-Bustamante1, Felipe Ordoño-Domínguez2, Yoni Pallas-Cos- ta1,2, Joaquín Juan-Escudero1, Pedro Navalón-Verdejo1,2*journal of Anesthesia and Surgery
8. East, J.M., DuQuesnay, D. Sclerotherapy of idiopathic hydroceles and epididymal cysts: a historical comparison trial of 5% phenol versus tetracycline. (2007) West Indian med J 56(6): 520-555.
9 Merenciano, F., Rafie, W., Amat, M., et al. Hydrocele Sclerotherapy and cord cyst with polidocanol. Efficiency Study. (2001) Actas Urol Esp 25(10):704-709. 10. Beiko, D., Kim, D., Morales, A. Aspiration and sclerotherapy ver- sus hydrocelectomy for treatment of hidroceles. (2003) Urology 61(4): 708-712.
11. Musa, M.T., Fahal, H.W., Arabi, Y. Aspiration sclerotherapy for hy- droceles in the tropics. (2016) Br J Urol 76(4): 488-490.
12. East, J.M., DuQuesnay, D. Sclerotherapy of idiopathic hydroceles and epididymal cysts: a historical comparison trial of 5% phenol versus tetracycline. (2007) West Indian med J 56(6): 520-555.
13. Romero, M., Ibáñez, R., Solano, D. Anatomical and technical foun- dations of the non-hemorrhagic treatment of simple hydrocele. Techni- cal contributions. (1994) Arch Esp Urol 47(3): 271-272.
14. Sampietro, A., Vaquerizo, A., Fernández, A. Major outpatient sur- gery in urology: our experience. (1995) Arch Esp Urol 48(4): 343-344.