How to Article

ANNALS OF MEDICINE & SURGERY

OPEN

How to Article: Prehabilitation and postoperative treatment at Shouldice Hospital

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Abstract

Shouldice Hospital has grown beyond its beginnings in the 1940s to become a leading centre of excellence for mesh-free hernia repair. Little is known to the international surgical community about the preoperative and postoperative care at Shouldice Hospital, and colleagues working at Shouldice Hospital have been repeatedly asked to provide more details at international and national congresses. Therefore, this article aims to summarize preoperative and postoperative care at Shouldice Hospital based on previously published literature. The authors believe that the long-standing tradition of prehabilitation and postoperative treatment may play a role in facilitating patient satisfaction and superior postoperative results after hernia surgery.

Keywords: postoperative recommendations, postoperative treatment, prehabilitation, Shouldice repair, weight loss

Introduction

In 1944, Dr Edward Earle Shouldice, the founder of the Canadian Shouldice Hospital and a major contributor to the repair, lectured at the annual Ontario Medical Association meeting. He described several elderly patients who had undergone herniorrhaphy and insisted on going to the bathroom right away. He also cited observations of rapid recovery (one physician and one farmer returned to work within a week of surgery)[1]. Therefore, it was decided to advocate the principle of early mobilization after hernia surgery (Fig. 1)[2]. At that time, postoperative hospitalization lasted for three weeks[2] but the Shouldice patients were sent home 3–4 days after surgery[2]. Essentially, the principle of "fast-track" was promoted more than 45 years before one of the first publications on this topic in the 1990s[3].

The Shouldice Hospital has grown since its beginning and is a leading centre of excellence for mesh-free hernia repair. More than 6500 inguinal hernias are operated on annually with good results in terms of recurrence rate and overall patient satisfaction[2,4]. The surgical technique, consisting of dissection and a 4 line/layer repair has been described in international consensus publications[2,4–7] as well as in a recently published chapter[8]. However, little is reported on the preoperative and postoperative care at the Shouldice Hospital.

This article aims to summarize preoperative and postoperative care at Shouldice Hospital.

HIGHLIGHTS

- Little is known to the international surgical community about the preoperative and postoperative care at the Shouldice Hospital.
- The article contains summary information about prehabilitation and postoperative care at Shouldice Hospital.
- The prehabilitation regimen of care may play a role in facilitating patient satisfaction and superior postoperative results after hernia surgery.

Prehabilitation

Prospective patients coming to the Shouldice Hospital start by filling out a general medical questionnaire. The patients living within a 100 km range of the hospital are required to have an appointment onsite and patients living further away are selected based on medical and hernia complexity. Healthy patients with primary small hernias are advised about prehabilitation requirements and booked, at this time a letter from the family physician confirming a hernia is necessary. The patients living further away who have complex medical histories and/or hernias will need to have a physical or virtual appointment before booking.

If comorbidities are detected, mainly ones where optimization is advised to improve surgical outcomes, the patients are requested to be assessed by their primary caregiver.

During preoperative consultations with a surgeon (physical or via questionnaire), some patients are referred to the dietician for weight loss. These surgeons recommend a set amount of weight to be lost using BMI, physical examination, and waist circumference measurements. This is because it is believed that BMI combined with physical examination and waist circumference measurements provide a more meaningful picture of

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Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

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Annals of Medicine & Surgery (2024) 86:1818–1820

Received 27 October 2023; Accepted 29 January 2024

Published online 8 February 2024

http://dx.doi.org/10.1097/MS9.0000000000001815

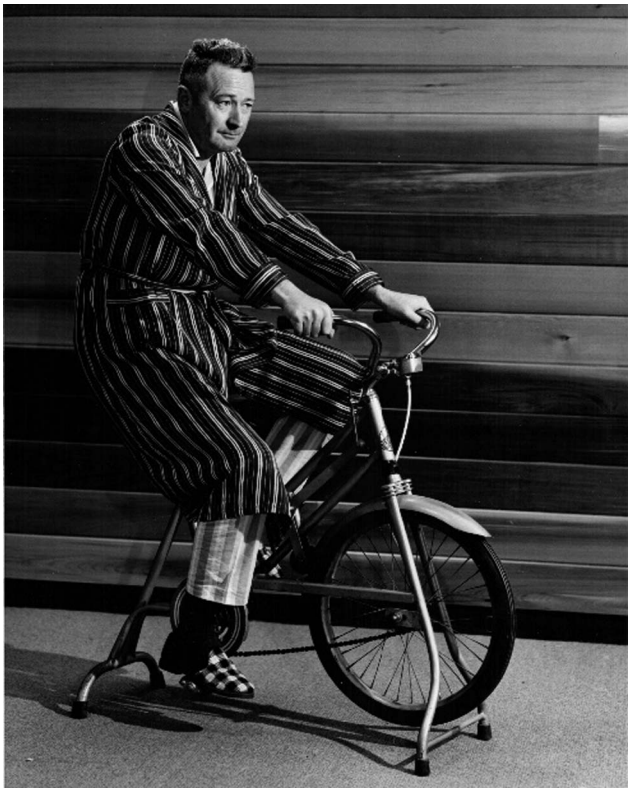

Figure 1. Archive photo of an exercise bike used by patients at Shouldice Hospital.

a patient's body composition. In cases of virtual interviews, self-taken photos may be requested by the dietician for review. The patients meet with the dietician online and/or in person and at this time a nutritional assessment is done as well as a diet plan created. The foundations of the diet plan focus on low carbohydrate/high protein (restricting refined carbs and sugars); however, plans are tailored to meet the patient's medical needs and lifestyle. The dietitian follows up with patients on a weekly to monthly basis. Once a patient is within 20 lbs of the target weight, they can be booked for surgery, and once at the target weight, the dietician provides a maintenance diet. The belief is that weight loss, supported by a professional dietician, can facilitate surgery, lower recurrences, reduce complications, and improve recovery.

The patients are provided with information on preparing for their stay and surgery with a handout. Hospital recommendations include halting supplements 2 weeks before surgery, stopping (or reducing significantly) smoking (cigarettes and/or cannabis) and consuming alcohol 4 weeks prior to admission since they may influence the healing and/or sedation course. For those patients wearing hernia belts (truss), the hospital recommends stopping wear 2–3 weeks prior to admission. The patients are informed to bath/shower before admission, paying particular attention to the skin around the hernia and the navel.

Prior to surgery

Patients arrive the day before surgery for admission and meet with a surgeon who reviews their health status and explains the main steps of admission and surgery, including sedation, and postoperative recovery. The patients are directed to a semi-private room, where they meet their roommate and other patients, some of whom have already had surgery. It is explicitly intended that people get to know each other through the various stages of care, as we believe this provides friendship and/or support as well as reduces any anxiety/stress. There is a 30-min orientation with nurses at 4:00 PM for further education and preparation.

Day of surgery

Unless receiving preoperative sedation or mobility issues, the patients walk to the preoperative waiting room 20 min prior to surgery. From there the patients are taken to the operating room where, most commonly, conscious sedation and local anaesthetic are administered. A patient may be partially awake during part or all of the procedure and can converse with the surgeons, anesthesiologist, and nursing staff. After surgery, the patients are assisted to sit, stand, and walk a few steps to a wheelchair. The patients are assessed for the time needed in the recovery room or to move directly to their room (occurs for most patients). The ward nurses assess the patients when they arrive and as needed in the initial 4 h. Four hours after surgery, the patients are reassessed with special attention to the level of consciousness and vital signs (including signs of orthostatic hypotension). The patients walk for the first time under a nurse's supervision and are released to walk by themselves if all feels well. The patients are encouraged to walk 5–10 min every hour while awake.

Recovery and discharge

To facilitate and encourage early mobilization, the patients are instructed to use stairs to take meals in the dining room and participate in light exercise or walks around the property. Throughout their stay, the patients can also use the guitar or piano and play shuffleboard. An example of a daily itinerary includes 7:40 AM breakfast, 8:30 AM doctors' round, 11:00 AM light exercises, 11:40 AM lunch, 5:30 PM dinner 5:30 PM, and 9:00 PM evening snack.

During the postoperative period, medications are preferentially administered orally, and the hospital follows an opioid-sparing practice with multimodal analgesia. For postoperative pain medication, most patients don't require opioid medications, and this can be possibly attributed to the use of multimodal analgesia (residual local anaesthesia effect, NSAIDs, and acetaminophen) and preoperative patient education which includes discussing expectations around surgery and recovery[9,10].

Depending on the individual pain level and distance from home (some international patients), the patients are discharged on postoperative days 2–3.

Postoperative treatment

Non-strenuous activities are immediately encouraged after surgery while the patients are still at the hospital. This is thought to prevent postoperative stiffness and discomfort by reducing lack of exercise, extended sitting, and/or bed rest. During daily rounds, physicians recommend the patients walk 5–10 min per hour.

The patients are provided with an exercise program that focuses on recovery and return to normal activities. This program

takes into consideration the varying ages and activity history of the patients. The current program consists of video exercises for 21 days, which was chosen based on the time it takes to implement a habit. The program encompasses a variety of exercises focused on moving the body in functional ways that will help patients mimic movements they do in everyday life. These include exercises to aid sitting, standing, twisting, and reaching. These simple and easy movements help the patients with their range of motion and reduce any feelings of tightness or the impact of scar tissue build-up through stretching and strengthening. The program offers patients the confidence to move in a controlled manner, which increases confidence and aids recovery.

Massage therapy is offered to patients 1–2 days after surgery and done by the registered massage therapists at the hospital. Sessions last for 45 min–1 h on the entire body, avoiding the incision/surgical area. This may have psychological and physiological benefits to treatment, including stress reduction, increasing endorphins and a sense of well-being, as well as increasing circulation and lymphatic drainage. It is thought that the benefits of increased circulation are the promotion of healing, and the increased lymphatic flow can increase drainage and reduce swelling.

At discharge, the patients receive a handout with postoperative recommendations. The patients are told to avoid bathing/showering for 7 days and avoid immersion in water (bath/pool/hot tub) as well as applying lotions/ointments to the incision for 14 days after surgery. Recommendations about return to sports is gradual starting 2–4 weeks after surgery and normal sexual activity when there is no discomfort. Return to work will vary according to the level of physical activity, usually 2 weeks for office jobs and 4 weeks for physical jobs. The patients are also informed about the most common postoperative health conditions (numbness, soreness/stiffness, bruising, swelling and discoloration).

Ongoing research and other initiatives focused on patient-reported outcomes, recovery, satisfaction, and overall experience are routinely done at the Shouldice Hospital.

Conclusion

There are different aspects to hernia surgery prehabilitation and postoperative care provided at Shouldice Hospital, which are described here.

Ethics approval

Not applicable.

Consent

Informed consent was not required for this how to article.

Source of funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author contribution

M.M., C.P., and F.A.C.S.N. revealed the data and wrote the manuscript. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Conflicts of interest disclosure

Marguerite Mainprize, Christoph Paasch, and Fernando AC Spencer Netto declare that they have no conflict of interests.

Research registration unique identifying number (UIN)

The article was not registered as it is not considered classic research but instead a how to article.

Guarantor

Marguerite Mainprize, Christoph Paasch, and Fernando AC Spencer Netto.

Data availability statement

Data are not available as we did not collect for this how to article.

Provenance and peer review

Not invited.

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