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Bilateral Balloon Expandable Biodegradable for Reducing Strut Thickness and Raising Radial Strength

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Abstract

Background: Radiotherapy is typically regarded as an absolute exclusion criterion for prostate cancer radiotherapy treatment in patients with active inflammatory bowel disease. There are no reports on the application of a biodegradable rectal balloon implantation for prostate cancer radiation in patients with active IBD. Presentation of the case: We describe a guy who had high-risk prostate cancer and an active IBD with pancolitis as a concomitant condition. Neo-adjuvant hormonal therapy and high-dose external beam radiation to the prostate and seminal vesicles were used in his treatment. In order to move the rectum outside of the high-dose region prior to radiotherapy treatment, a biodegradable RBI was inserted between the prostate and the anterior rectal wall. The prostate of this patient, who was at high risk for rectal toxicity, was effectively exposed to radiation using only a grade A biodegradable sub acromial spacer of the In Space type was the foundation of a minimally invasive procedure that was recently released on the market. As the name implies, the treatment entails inserting this saline-filled device as a spacer between the acromion and the humeral head in the sub acromial space.

Keywords: Applied biotechnology; Biocatalysis; Biodegradable balloons

Introduction

The spacer is made of a biodegradable polymer that lasts for 12 months before being reabsorbed [1]. The spacer's primary goal is to reestablish the shoulder's biomechanics, mimicking the effects of a spacer [2]. The RC tendons cause a dip in the humeral head, lowering sub acromial friction [3]. The primary goal of this surgery is to reduce discomfort in patients with severe, irreversible TC rips when an option is sought before performing a more invasive procedure [4]. To help surgeons determine whether patients would be good candidates for this intervention, a number of criteria have been established [5]. To start, age. Patients under the age of 50 should not undergo this treatment because better cuff reconstruction options, such as tendon transfers or superior capsular reconstruction, may be available in these circumstances [6]. Second, because favourable results are not achieved in the so-called pseudo paralytic shoulder, the patient should maintain a proper passive joint range of the shoulder [7]. Additionally, glen humeral osteoarthritis should not only be indicated in the early phases of the Hamada classification [8]. In patients with severe osteoarthritis, inverted arthroplasty would be suggested right away. The gadget simply widens the sub acromial space, thus it must be kept in mind as well [9]. Consequently, be kept across the coracoacromial ligament in the anterior area and through the acromion in the posterior area [10]. Patients who have previously had anatomically altering procedures, such as acromioplasties, there increased balloon movement, primarily anterior displacements, outside the sub acromial area [11]. The purpose of this study was to evaluate the results of our use of biodegradable In Space type A prospective research was done of a series of consecutive cases with irreparable rotator cuff injuries where a sub acromial balloon was implanted between January 2015 and December 2017 [12]. The spacer balloons were compared to those described in the literature. Every intervention was made by three separate surgeons at the same hospital [13]. With the same centre two questions were posed to patients to gauge their satisfaction with the procedure. 73% of the patients said that they were happy with the procedure and would get surgery again [14]. One patient who had a case included in the study required further surgery 15 days following the intervention for material extraction due to a possible infection [15]. Upon removing the implant, foul-smelling substance was seen. Around the deflated balloon, this spread from subcutaneous cellular tissue to the sub acromial region. No substantial alterations were seen in the inflammatory markers, with with a 5 mg/L CRP. The patient didn't have a fever or a general malaise on a systemic level. Cultures tested unfavourable. The ultimate diagnosis was a reaction to a foreign body in light of the findings. We feel that the findings from our study are consistently in favour of the use of this device if we consider the primary goals of an In Space® type sub acromial balloon spacer, which are to reduce pain and restore joint function. There are a number of theories as to why poor outcomes after balloon implantation are occasionally attained. If we compare them to other studies, we have successfully partially reproduced the satisfactory results of Senekovic et al.6 and Gervais et al.10, two publications which analysed case series with positive results.

Discussion

Early device migration outside of the sub acromial region is one, and mechanical implant failure is another. Three situations have come up in our experience during the past three years. Failure to stabilise the front and posterior rotators as much as feasible could be another issue that would justify an unsatisfactory evolution with balloon spacer use. We think that a partial repair of the rotator cuff muscles would enhance the course of the patient. Several writers mention the positive results of partial repair using the sub acromial balloon technique. Despite the various ideas put forth, we think that a poor surgical rationale is the primary cause of a disappointing outcome. When an alternative is needed before a more intrusive operation, the balloon spacer is a device

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whose main purpose is to alleviate discomfort in individuals with an irreparable RC. The ideal patient, as stated in the introduction, is, in our opinion, who has not had surgery before and who still has a decent passive joint range of the shoulder. Patients who have had prior surgery that left their anatomy feeling altered may be more likely to have the balloon spacer migrate outside of the sub acromial area. Since anterior balloon spacer displacements were most frequently reported, we believe that structure to be crucial for maintaining device stability. The coracoacromial ligament connects the anterior acromion edge, and as such, this tissue must be preserved. The results from our study after a year of follow-up are encouraging for the use of a sub acromial balloon spacer of the In Space® type as a therapeutic alternative for patients. RC rips that are beyond repair. The possibility of radiation-induced intestinal poisoning poses a serious issue in the case of IBD. We are aware of no radio protective agents that can avoid this severe adverse effect, thus the only logical course of action appears to be to keep sensitive structures out of the high-dose region. In order to reduce the radiation exposure at the rectal wall during dose-escalated EBRT in a patient with active IBD, this is the first instance of a successful RBI implantation. It's crucial to recognise some of the proposed workaround's limitations. First off, ten months is not much of a follow-up time period to review a thorough late toxicity report. Second, submucosal inflammation and scarring could be another potential issue with the insertion of an RBI in those with Crohn's disease. Additionally, 9 out of 149 cases of rectal wall perforation were previously reported by FisherValuck and colleagues. However, scientists have not yet found a connection between patient problems and rectal wall infiltration, and the effects of rectum perforations in patients with active IBD are yet unknown. To demonstrate the safety of this technique in this group of individuals, more clinical research is required. Last but not least, the majority of research on the use of spacers in men with low- and intermediate-risk prostate cancer is scarce. The function of spacers in high-risk and locally advanced prostate cancers it's unclear how potential rectal wall invasion would work. In their series of 243 prostatectomy specimens, Villers and co-authors found that prostate cancer penetrated the Denonvilliers' fascia in 19% of cases. In diabetic patients with critical limb ischemia, calcific lesions and CTO present a significant difficulty. Due to the medicine's incapacity to permeate media-intima calcium and the resulting jeopardization effect, modern drug eluting devices have failed to appreciably improve the results of these patients. For the treatment of femoral/popliteal disease in patients with critical limb ischemia, this study compared the use of ultrasound plasty in conjunction with local Paclitaxel delivery to the use of drug-eluting balloons.

Conclusion

The single-center, single-blinded randomised trial included 56 patients with critical limb ischemia who were randomly assigned to treatment in 2 groups. 28 patients received ultrasound energy followed by local administration of Paclitaxel in a liquid mixture with iopromid the average lesion length in the study group was 168.8 mm, and 21 individuals developed calcifications. Massive rotator cuff rips are frequent and become more frequent as people age. Since many of them are irreparable, they present a difficult problem to solve. Although there are many surgical treatments, some of them can be lengthy and require general anaesthesia, making them unsuitable for senior individuals or those with serious medical conditions. In this study, we assess the function of a biodegradable balloon put under local anaesthetic for a group of patients with major medical comorbidities and massive cuff rips. Between June 2018 and April 2019, a group of patients underwent a prospective pilot trial. It was possible to gather demographic information as well as preoperative and postoperative clinical information, such as Subjective Shoulder Value and Oxford Shoulder Scores. We have discussed the safety and early benefits of using a biodegradable balloon spacer that is inserted during local anaesthesia as a management option for patients with severe rotator cuff tears who may not be candidates for other extensive reconstruction options. This is especially true for providing short-term pain relief as significant long-term benefits have not been shown.

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Conflict of Interest

None

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