

The Role of Epidural Steroids in the Outcome of Postoperative Lumbar Discectomy

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Abstract

Background: Many surgeons prefer using intra-operative steroids directly over the dura and nerve root claiming that it decrease the post-operative pain, this study was made to determine if there is real role of steroids on the post-operative pain after lumbar discectomy.

Patients and Methods: This is a prospective study in which we collected the data of 104 patients who underwent single level laminectomy and discectomy from March 2013 to March 2016 in Faculty of Medicine, Bani-Seuf University. Recurrent disc and multiple disc affection were excluded from these study. We divided the patients into 2 groups, Group (A) which receive steroids intra operatively on the dura and included 50 patients and Group (B) without usage of steroids and included 54 patients, the patients in the 2 groups were compared in the post-operative pain by consumption of pain killer, the timing of hospital stay also the duration to return to normal daily activity.

Results: Considering the drug use after surgery the mean rate in Group (A) was about 10mg of narcotics vs. 10.4mg in Group (B) the duration of hospital stay in both groups was 3 days patients of both groups were able to walk on the operation night, the mean interval duration before returning to normal daily activity was 18 day in Group (A) and 20 days in Group (B) the results of these parameters did not show any significant difference between the 2 groups.

Conclusion: Intra-operative steroid usage by direct apply on dura does not affect the severity of post-operative pain after lumbar disc removal it does not shorten the hospital stay or time needed to return to work.

Key Words: Discectomy – Post-operative – Steroid – Epidural.

Introduction

FAILURE of medical treatment of lumbar disc prolapse and the accompanying radicular pain makes the surgery is a good option for management and pain relief [1-2]. Sometimes some patient continues to have pain even after un complicated

surgery [3]. In practice using oral steroids during the conservative treatment helps to reduce pain [2-3] also epidural injection of steroids helps patients to improve so with the role of steroids in reducing pain is well known [4-6]. Number of surgeons worldwide are applying intra-operative blouse dose of steroids over the exposed part of dura and nerve root to help in reducing post-operative pain [7,8], a study made in Canada estimated that about 49% of surgeons are using intra-operative epidural steroid [5-9]. This prospective study was made to assess the role of intra-operative epidural steroids in decreasing pain.

Patients and Methods

We conducted a prospective study in which we collected the date of patients who underwent only single level lamnectomy and discectomy from March 2013 to March 2016 in Faculty of Medicine, Bani-Seuf University the patients who had lumbar surgery due to multiple levels disc herniation 43 or recurrent disc were excluded from the study the patient selection was according to patient complaint which was confirmed by full neurological examination and investigation such as in dynamic X-ray of lumbo-sacral spine to exclude any instability and MRI to confirm the which disc prolapsed and that surgery for single level discectomy, from the history it was confirmed the patient had sufficient medical treatment in the form of analgesics and muscle relaxant and even oral steroids and all these maneuver did not succeed, the routine labs and anesthetic consultation was done as pre-operative assessment. The study included 104 patients and were divided into two groups, Group (A) those who used epidural steroids intra-operative and the number of patients was 50 Group (B) those who did not used intra-operative steroids and the number of patients was 54, the comparison between the 2

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groups was in the post-operative pain, the amount of narcotics used was indicator for pain relive, also the duration of hospital stay and finally the interval required after discharge to restore normal daily activity.

Operative technique: All the patient who were selected in this study underwent single level laminectomy and discectomy after removal of the disc material the patient in Group (A) received epidural Depo-Medrol with concentration 40mg/ml it was irrigated over the dura and nerve root.

Post-operative follow-up: Pain killers are used in both group in the form of non steroidal anti inflammatory and narcotics when needed and the amounts were recorded, the timing of hospital stay for every case were recorded and patients were discharged when they felt that the condition become fine. Follow-up after 3 weeks to evaluate the patient condition and the assure they restored their regular activity another follow-up was done after another 3 weeks to check their ability to back to their work.

Results

This study included 104 patients there were 69 patients male and 35 patients were female their age ranges from 23 years to 55 years with mean age was 39 years, all the patients had positive leg raising test in 76 patients, free disc fragment was detected the L3-4 hernia ion was in 14 patients and L4-5 disc herniaion in 36 patients and 54 patient were L5S1.

Considering pain medication there was no significant difference between the two groups in using pain killers or narcotics the mean in the Group (A) was 10mg of narcotics vs. 10.4mg in the Group (B).

In the duration hospital item we found no significant difference, most of patient spent 3 days but some patient were discharged on the second day.

In return to work item we found also no significant difference between the 2 groups it was 18 day in Group (A) and 20 days in Group (B) we did not found any co relation between genders or the level of disc affected and the amount of pain killer used and in return, the clinical condition in this study we had no neurological deterioration dural tear was recorded in 5 patients, all case was managed by direct suture, no patient showed leak or pseudo meningeocele.

Discussion

In the early studies made by pioneer neurosurgeons the pathophysiology of pain was due to direct compression by the prolapsed disc on the adjacent nerve root [3-10]. In the latter studies it was suggested there is relation between chemical mediators and the pain occurrence, in experimental model it was found not the amount of compression on the root but the rate of distortion and edema formation this was proved by the change in the size of nerve root swelling and distortion that happened in patients having improvement after disc prolapsed [4,8,11]. It was also proved by taking nerve biopsy and found marked inflammatory cells affecting the root during disc herniation, in the most recent study the condition was explained as the immune system recognize the disc material so when compressing occur on the root, immune system is stimulated and induce inflammatory response and in prolonged compression arachnoiditis will occur [1,7,12,13]. All these studies explain why surgeons like to use steroids in the management of disc prolapsed and intra-operatively, in the study made by Dilke and his college they found improvement of pain after use intra-operative steroids, and the time of return to work become shorter [14]. But Snoek and his college found no difference in their study [15], although there are many studies recommend the use of the intra-operative steroids due to the good outcome but by reviewing the way these studies were conducted and the 2 groups being not randomized and comparable [16].

Conclusion:

Although intra-operative use of epidural steroids is popular between surgeons but it seems it has no role in management of post operative pain and still adequate decompression is the key of pain relief.

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دور الكورتيزون فوق الأم الجافية في النتائج ما بعد الجراحة الإستئصال الغضروف القطنى

الهدف: كثير من الجراحين يقوم بوضع الكورتيزون أثناء العملية فوق الام الجافية وطرف العصب من أجل تقليل الألم بعد العملية الهدف من هذه الدراسة هو تحديد هل للكورتيزون دور حقيقى فى الأم بعد العملية فى حالات إستئصال الغضروف القطنى.

الدراسة والمرضى: هذه دراسة مستقبلية شملت ٣١٢ مريض تم إجراء جراحة لإستئصال الغضروف القطنى على مستوى واحد وذلك فى الفترة من ٢٠١٣ إلى ٢٠١٦ فى مستشفيات جامعة القاهرة حيث تم تجميع كل البيانات الخاصة بالمرضى وتقسيمهم لمجموعتين مجموعة سوف يتم إضافة الكورتيزون أثناء العملية. خارج الأم الجافية والمجموعة الأخرى بدون إضافة الكورتيزون وتم مقارنة المجموعتين من حيث الألم بعد العملية وإستخدام معدل إستهلاك المسكنات كدليل على شدة الألم وكذلك مدة المكوث فى المستشفى وأخيرا معدل الرجوع للعمل بعد العملية الحالات المرتجة أو إلى إحتاجت لإستئصال الغضروف على أكثر من مستوى تم إستبعادها من هذه الدراسة.

النتائج: بالنسبة لمعدل إستخدام المسكنات فى المجموعة الأولى كان حوالى ١٠ مج من المواد المخدرة فى مقابل ١٠.٤ فى المجموعة الأخرى أما معدل الإقامة فى المستشفى كان حوالى ٣ أيام بالنسبة للمجموعتين وأخيرا بالنسبة لمعدل الرجوع إلى العمل بعد العملية كان حوالى ١٨ يوم فى المجموعة الأولى إلى ٢٠ يوم فى المجموعة الثانية وبالتالي نتائج المقارنة بين المجموعتين لم تظهر أى إختلاف ذو قيمة بينهم.

الإستنتاج: إضافة الكورتيزون أثناء العملية على الأم الجافية لم يؤثر فى شدة الألم بعد العملية أو يقلل مدة الإقامة فى المستشفى أو معدل الرجوع إلى العمل بعد العملية.