Med. J. Cairo Univ., Vol. 93, No. 3, Accepted 30/6/2025
DOI: 10.22608/MJCU. 1393-1401, September 2025
www.medicaljournalofcairouniversity.net

Assessment of Surgical Outcome of Sacroiliitis Injection in the Same Session of Lumber Surgeries

AMR F. GOMAA, M.D.*; AHMED R. ABDELFATAH, M.D.**; ADHAM RABIE, M.D.*** and MAHMOUD A. GOMAA, M.D.*

The Department of Neurosurgery, Faculty of Medicine, Fayoum University, Orthopedics Department, Faculty of Medicine, Fayoum University** and Neurosurgery Department, Faculty of Medicine, Beni-Suef University****

Abstract

Background: Persistent low back pain (LBP) after lumbar spine surgery remains a significant source of patient dissatisfaction and healthcare burden. While various factors contribute to postoperative LBP, the sacroiliac (SI) joint is increasingly recognized as a common and often underdiagnosed pain generator, particularly in patients with altered spinal biomechanics following lumbar fusion. Sacroiliitis, or inflammation of the SI joint, may be overlooked in the preoperative workup, leading to persistent symptoms despite technically successful spinal procedures. Addressing SI joint pathology at the time of lumbar surgery may offer a more comprehensive and effective approach to pain management.

Aim of Study: To evaluate the surgical results of SI joint injections carried out in the same session with lumbar surgery for patients who had lumber pathology with preoperative sacroilietis.

Patients and Methods: Sixty patients with preoperative sacroiliitis who participated in this study underwent lumbar spine surgery. Intraoperative SI joint injection was administered with local anesthetic and corticosteroid to all patients. Visceral pain intensity was assessed with a Visual Analogue Scale (VAS) pre-, 3, and 6 months after the operation. The main endpoint measured was percentage improvement in VAS scores. Other outcomes included patient satisfaction and correlations of clinical and operative variables with pain improvement.

Results: Preoperatively, the mean VAS score was 6.47± 1.44, which significantly decreased (p<0.001) to 3.17±1.71 at 3 months and further to reach 3.70±2.23 at 6 months (p<0.001 when compared to baseline). At 3 months, it was 50.79%, and at 6 months, it was 36.67%. At 3 months, satisfaction or very satisfaction was reported in 63.3% of patients. Early (3-month) and final (6-month) pain improvement was observed to be strongly and positively correlated (r=0.730, p<0.001). It was found that there was a statistically significant negative correlation (r=–0.283; p=0.028) between the number of operated levels and improvement at 3 months. Sex, age, S1 fixation, or interbody fusion were not found to be associated with statistically significant pain improvement.

Conclusion: Intraoperative SI joint injections offer a promising, minimally invasive strategy for reducing postoperative pain in patients with coexisting sacroiliitis undergoing lumbar fusion surgery. Pain relief was most pronounced at 3 months, with partial retention of benefit at 6 months. The early response appears predictive of long-term improvement.

Key Words: *Sacroiliitis – Sacroiliac joint injection – Lumbar spine surgery – Postoperative pain – VAS – Patient satisfaction – Intraoperative intervention.*

Introduction

SACROILIITIS is an inflammation of the sacroiliac joint (SI), that usually causes pain **[1]**. Lower back and buttock pain are frequently caused by the SI joint **[2]**. It is considered one of the largest joints in the human body that connects the bones of the sacrum to the ilium **[3]**. Since the symptoms of sacroiliitis are similar to those of many other frequent causes of back pain, diagnosing it can be extremely challenging **[4]**.

Pain in the SI joint and surrounding structures mayappear as sacral, pelvic, low back, or gluteal pain in patterns that differ widely **[5]**. The pain may be presented as sensations such as clicking pain, popping, or numbness usually below the beltline **[6]**. Low back pain is a prevalent clinical symptom that affects over 70% of individuals at some point

Correspondence to: Dr. Amr Fathi Gomaa, The Department of Neurosurgery, Faculty of Medicine, Fayoum University

in their life **[7].** There are different causes of SI joint pain ranging from traumatic causes such as motor vehicle collisions, abrupt rotation, and falls to atraumatic causes such as ankylosing spondylitis, prior lumbosacral spinal fusion surgery, scoliosis, arthritis, and infection **[8,9].**

Lumbar spine surgeries, including decompression, discectomy, and fusion, are widely performed to address conditions such as lumbar disc herniation, spinal stenosis, and spondylolisthesis **[10,11].** However, despite surgical correction of the primary lumbar pathology, some patients continue to experience residual pain, which may be attributed to undiagnosed or coexisting Sacroiliitis **[12].** In such cases, SI joint injections, which involve the administration of corticosteroids and local anesthetics into the joint, serve as a minimally invasive intervention to reduce inflammation and alleviate pain **[13].**

The purpose of this study is to evaluate the surgical results of SI joint injections carried out in the same session with lumbar surgery for patients who had lumber pathology with preoperative sacroiliitis. Evaluation of postoperative pain improvement, patient satisfaction, and functional enhancement are the main goals. We hypothesized that knowing the effects of this combined intervention could help pain experts and spine surgeons make better decisions about future surgical procedures and therapeutic approaches. This strategy may provide a good approach to deal with persistent postoperative pain and improve patient outcomes after lumbar spine surgery.

Patients and Methods

The current study is a prospective observational study that included 60 patients who had sacroiliitis associated with lumber pathology which needs lumber surgeries. The included patients were recruitedfrom the Neurosurgery Department during the period from February 2024 to September 2024 in Fayoum University Hospitals and Beni-Suef University Hospital.

Study population:

Sixty patients were recruited and underwent lumbar or lumbosacral surgeries. The participants were followed-up for six months after surgery for sacroiliac joint pain.

Inclusion criteria:

In our study we included Patients Ages between 20 and 65 years, diagnosed to have sacroiliitis associated with lumber pathology which needs lumber surgeries after failed medical treatment.Non-traumatic causes of spinal fusion. No neurological issues preoperatively.

Exclusion criteria:

We excluded patients with recurrent lumber surgeries, Ankylosing spondylitis cases and Uncontrolled comorbidities that contraindicate surgery.

Preoperative assessment:

All patients underwent a comprehensive neurological examination and a thorough medical history assessment prior to surgery. All patients were fully examined and investigated with an MRI lumbosacral spine and Dynamic lumbosacral X-rays, to determine that they needed lumber surgery after failed medical treatment.

Sacroiliac joint provocative tests for sacroiliitis were done for all patients. The FABER test involves flexion, abduction, and external rotation of the hip while stabilizing the pelvis by applying pressure to the anterior superior iliac spine (ASIS). The distraction test is conducted with the patient in a supine position, applying simultaneous lateral pressure to both ASIS; pain localized to the sacroiliac region is indicative of possible inflammation. The compression test is performed with the patient lying on the affected side, during which the examiner applies a downward force to the iliac crest to stress the SI joint. In Gaenslen's test, the affected leg is allowed to hang off the examination table while the contralateral hip is flexed toward the chest and stabilized; pain elicited in the SI joint region suggests pathology. The thigh thrust test is performed by passively flexing the patient's hip to 90 degrees while stabilizing the contralateral pelvis through pressure on the opposite ASIS, applying an axial load through the femur. A diagnosis of sacroiliitis is strongly supported when three or more of these tests increase pain in the sacroiliac region, with reported specificity of 78% and sensitivity of 91% **[5,14].**

Study procedure:

All procedures were performed under general anesthesia. Patients were placed in the prone position on a radiolucent operating table to facilitate access to both the lumbar spine and sacroiliac joint. After doing lumber fixation surgery, patients underwent sacroiliac joint injection intraoperative by corticosteroids and local anesthetics (14mg of betamethasone + 1.5ml of Bupivacaine 0.25%) in the same session, by the same surgeon, with the use of C-arm fluoroscopy:

1- Localization of the Sacroiliac Joint: Under fluoroscopic guidance, a 22-gauge spinal needle was

inserted into the sacroiliac joint using an oblique approach.

2- Contrast Injection: A small amount of radiopaque contrast dye (omnipaque) was injected to confirm proper intra-articular placement.

3- Medication Administration: A mixture of corticosteroids and local anesthetics (14mg of betamethasone + 1.5ml of Bupivacaine 0.25%) was injected slowly.

4- Needle Removal and Hemostasis: The needle was withdrawn, and light pressure was applied to prevent post-procedural bleeding.

Fig. (1): Showing omnipaque dye injection in left sacroiliac joint.

Postoperative follow-up:

All patients were examined for clinical improvement and follow-up of sacroiliac joint pain after 2 weeks then after 3 and 6 months postoperatively. Pain severity was assessed using the Visual Analog Scale (VAS).

Primary outcomes:

• Improvement of sacroiliac joint pain.

Secondary outcome parameters:

• Improvement of back pain.

• Improvement of associated sciatica of lower limbs.

• Patient satisfaction after the procedure.

Ethical consideration:

Ethical approval for this study was obtained from the Faculty of Medicine Ethics Committee at Fayoum University (approval number RH-DIRB30012022001). Informed consent was obtained from all the included patients. The privacy of all participants and the confidentiality of their data were strictly maintained throughout the study. The study results were collected, tabulated, and analyzed statistically for purely scientific purposes.

Statistical analysis:

The research data was carefully collected and organized for easy analysis. It was entered twice into Microsoft Access to ensure accuracy. Data analysis was then conducted using SPSS version 22 on a Windows 7 system. The analysis included basic descriptive statistics. For qualitative data, we used frequencies and percentages. For quantitative data that met the assumptions for parametric tests, we calculated the mean as the average and the standard deviation (SD) to measure how spread out the data was. This version aims to be clearer and more concise while maintaining the original meaning.

Results

A total of 60 patients were included in the study. As shown in Table (1), the majority of the participants were female (80%), while males constituted 20% of the sample. The mean age of the studied group was 48.67±12.57 years.

Table (1): Distribution of the Studied group regarding their general characteristics (n=60).

	Category	N	%
Sex	Female	48	80
	Male	12	20
Age	Mean ± SD	48.67±12.57	

Regarding operative characteristics Table (2), S1 fixation was performed in 63.3% of patients, while 36.7% did not undergo S1 fixation. Interbody fusion was not performed in 73.3% of the cases, while it was done in 26.7%. In terms of the number of operated levels, 53.3% of the patients had two levels involved, 30% had three levels, 6.7% had four levels, and 10% had five levels.

Table (2): Distribution of the Studied group regarding S1 fixation, Interbody fusion, and number of levels (n=60).

Items	Category	N	%
S1 fixation	No	22	36.7
	Yes	38	63.3
Interbody fusion	No	44	73.3
	Yes	16	26.7
No. of levels	2	32	53.3
	3	18	30.0
	4	4	6.7
	5	6	10.0

As presented in Table (3) and illustrated in Fig. (2), the Visual Analog Scale (VAS) scores showed a statistically significant reduction across all time intervals. The mean preoperative VAS score was 6.47±1.44, which significantly decreased to 3.17±1.71 at three months postoperatively, and slightly increased to 3.70±2.23 at six months. The Friedman test revealed that these differences were statistically significant (p<0.001). Pairwise comparisons indicated a significant reduction from preoperative to 3 months (p_1<0.001), a slight but significant increase between 3 and 6 months (p_2=0.024), and a maintained significant decrease from preoperative to 6 months (p_3<0.001).

Table (3): Relation between pre-VAS, Post-VAS 3 months, post-VAS 6 months (n=60).

	Mean ± SD Median (IQR)	Test	*p*-value	
Pre-VAS	6.47±1.44 7 (5-7)	62.772	<0.001*	p_1<0.001* p_2=0.024*
Post-VAS 3 months	3.17±1.71 3 (2-5)			p_3<0.001*
Post-VAS 6 months	3.7±2.23 3.5 (2-6)			

Friedman test.

p1: Pre-operative versus 3 month post-operative.

p2: 3 month post-operative versus 6 month post-operative.

p3: Pre-operative versus 6 month post-operative.

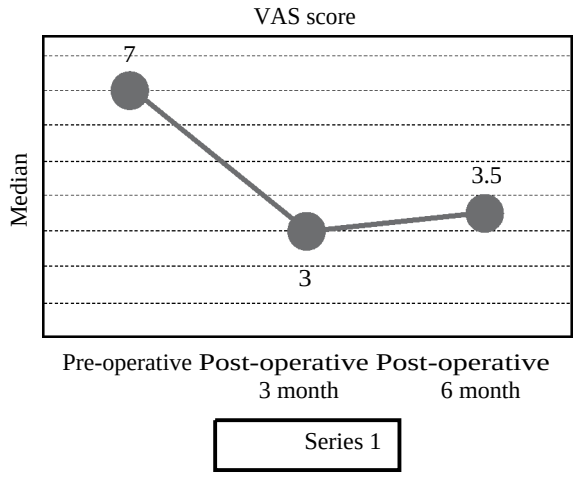

Fig. (2): Line graph illustrating VAS score at different intervals.

Table (4) and Fig. (3) summarize the percentage improvement in VAS scores. The median percentage improvement at three months was 50.79% (IQR: 28.57–71.42), while the median final improvement at six months was 36.67% (IQR: 16.67–62.5), suggesting a trend toward a partial loss of early pain relief over time.

Table (4): Percent of improvement at 3 months and final percent of improvement.

Category	Median (IQR)
3 months percent of improvement	50.79 (28.57-71.42)
Final percent of improvement	36.67 (16.67-62.5)

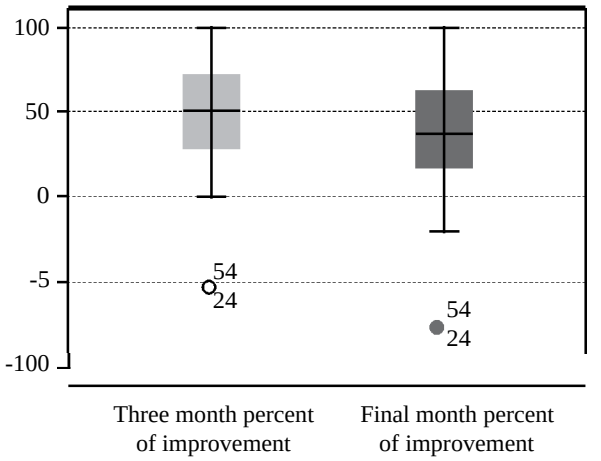

Fig. (3): Box blot illustrating percent of change at different intervals.

No statistically significant associations were found between sex, S1 fixation, or interbody fusion and either the 3-month or 6-month percent improvement in VAS scores (p>0.05 for all comparisons, Table (5). For example, the median 3-month improvement was 44.4% in females versus 63.33% in males (p=0.882), and the median 6-month improvement was 36.67% and 51.67%, respectively (p=0.911). Similarly, no significant differences were observed for S1 fixation or interbody fusion groups.

Table (5): Relation between percent of improvement and different parameters.

	Item	3 month percent of improvement Median (IQR)	Test	*p*-value	The final percent of improvement Median (IQR)	Test	*p*-value
Sex	Female Male	44.4 (31.25-73.21) 63.33 (28.57-66.67)	–0.148	0.882	36.67 (20.83-58.57) 51.67 (0-85.71)	–0.111	0.911
S1 fixation	No Yes	57.14 (40-85.71) 44.44 (20-71.42)	–1.137	0.255	28.57 (20-40) 42.85 (0-83.33)	–1.015	0.310
Interbody fusion	No Yes	44.44 (37.5-75) 61.90 (8.33-69.05)	–0.871	0.384	33.33 (20-60) 50 (0-91.67)	–0.637	0.524

Patient satisfaction outcomes are shown in Table (6) and Fig. (4). At three months postoperatively, 50% of patients reported being satisfied, while 13.3% were very satisfied. Neutral responses were reported by 20% of patients. Conversely, 10% of the participants were very unsatisfied and 6.7% were unsatisfied.

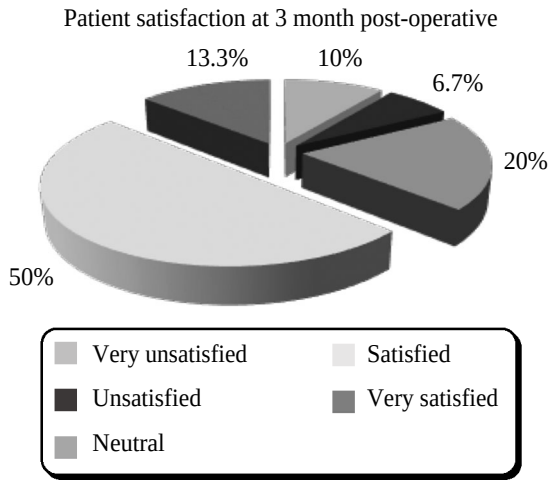

Fig. (4): Pie graph illustrating patient satisfaction of the studied group.

Correlation analysis presented in Table (6) and visualized in Figs. (5,6) demonstrated a strong positive correlation between the 3-month and final percentage improvements (r=0.730,p<0.001), suggesting that early postoperative pain relief is predictive of longer-term outcomes. There was also a statistically significant negative correlation between the number of operated levels and the 3-month percent improvement (r=–0.283, p=0.028), indicating that patients undergoing multilevel procedures tended to have a lesser degree of early improvement. No significant correlations were found between age and improvement at either time point.

Table (6): Correlation between the percent of improvement and different parameters.

Items	Items	3 months percent of improvement	The final percent of improvement
3 months percent of change	*r* *p*-value	– –	0.730 <0.001*
Age	*r* *p*-value	-0.010 0.937	-0.102 0.440
No of levels	*r* *p*-value	-0.283 0.028*	-0.089 0.498

Spearman correlation:

This table illustrates that there is a significant positive correlation between the 3-month percent of improvement and the final percent of improvement, and there is a significant negative correlation between the 3-month percent of improvement and the number of levels.

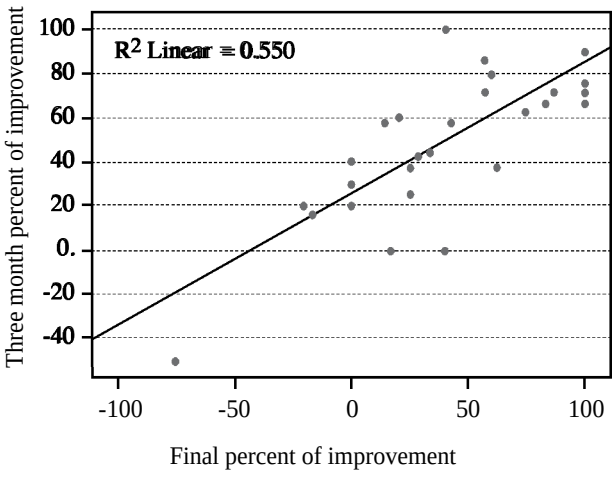

Fig. (5): Scatter diagram illustrating the positive correlation between the 3-month percent of improvement and the final percent of improvement.

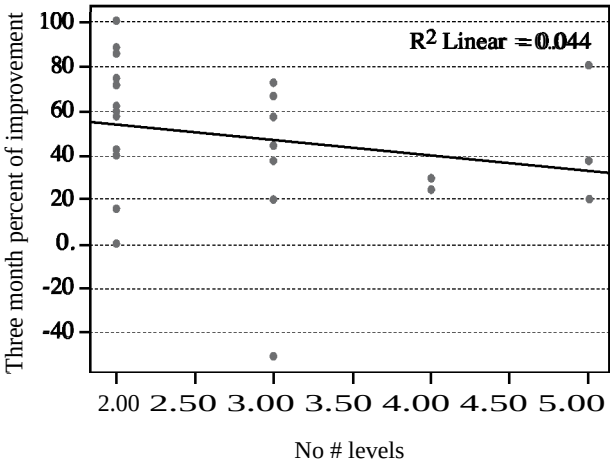

Fig. (6): Scatter diagram illustrating the negative correlation between the 3-months percent of improvement and no. of levels.

Discussion

Hence, the objective of this study was to evaluate the effectiveness of intraoperative SI joint injection with corticosteroids and local anesthetics, performed in conjunction with surgical treatment of lumbar pathology and sacroiliitis. Our results present a statistically significant decrease in the level of sacroiliac joint pain after the operation, as evidenced by a decrease in VAS scores in 3 and 6 months from the operation and a good level of patient satisfaction. Our data of a significant reduction in VAS scores also corresponds to previous literature about the efficacy of SI joint injections. An example of such a prospective observational study is reported by Ab Aziz et al. [13], where mean VAS decreased from 5.85 at baseline to 3.00 at six months after injection of a combination of triamcinolone and ropivacaine. Also found that SI joint injections with anesthetic and corticosteroid did provide significant pain relief, as 58.8 percent of patients had a pain score reduction of ≥2 points at 2 to 4 weeks and sustained improvement at 6 months [15].

The improvement observed in SI joint pain aligns with the literature, which shows evidence of improvements with targeted SI joint interventions. In a comprehensive review, Cohen [16] demonstrates that SI joint pain is a challenging condition affecting 15% to 25% of patients with axial low back pain, and intraarticular corticosteroid injections relieve the condition in a selected portion of patients.

Only translational and rotational motions are possible in the joint motion. The average rotation is between 1° and 12°, and translation is from 3 to 16mm. These characteristics make the SIJ more susceptible to axial compression and rotational stresses than the lumbar portion of the spine [17].

The results show that pain improved by a median of 50.79% at 3 months, but this improvement dropped to 36.67% at 6 months. This decline is partly due to the temporary anti-inflammatory effect of corticosteroids. These findings highlight that relying on injections alone may not provide lasting relief, and that combining them with structural interventions, such as lumbar decompression or stabilization, may be necessary for long-term benefits. In our analysis, we did not find any significant associations between sex, S1 fixation, interbody fusion, and the percentage of clinical improvement. This reveals that the outcome of SI joint injections may be more closely correlated with preinjection symptom duration and diagnostic accuracy rather than the surgical technique alone. Reports on SIJP after fusion range widely, mainly because of differences in their diagnostic criteria, the imaging used and how long patients were followed-up [18,19]. The incidence of SIJP in Colò et al. [20] found to be 52.6%, which surpasses most similar studies in the literature but is at the upper range of today's research [21]. Because the sacroiliac joint is put under greater pressure following complete fusion involving the sacrum, this may cause the elevated rate of sacroiliac joint disease symptoms observed. A number of studies prove that a lumbosacral fusion is often linked to wear and tear in the sacroiliac joint. Ha et al. [22] discovered that the prevalence of degeneration in the sacroiliac joint is much higher among patients who have undergone fusion (75%) than among controls who did not have surgery (38.2%). A noticeable difference was seen when comparing fusion to S1 and fusion to L5. All S1 patients suffered degenerative changes, whereas fusion to L5 resulted in degenerative changes in only 64% of the cases. This indicates that the SIJ suffers a greater biomechanical load when S1 is involved, mainly due to interrupted motion and different load flow.

Results of a systematic review and meta-analysis by Ruffilli et al. [23] also support this finding by indicating that patient selection and accurate diagnosis are most important in the performance of SI joint injections. The number of operated levels showed a significant inverse correlation with the 3-month percentage of improvement, which may be related to the additive biomechanical load on the sacroiliac region in multilevel surgeries. According to Ivanov et al. [24], lumbar fusion results in increased motion and stress in the SI joint and may promote postoperative pain.

Though 80% of the cohort were female (consistent with the known higher prevalence of sacroiliitis in women), no significant gender differences in outcomes were found. This is also in accordance with prior studies that have shown that despite gender having an effect on disease incidence, it doesn't necessarily affect response to treatment. This corroborates objective findings of pain reduction, as there were more than 60% of patients who were satisfied or very satisfied 3 months post-operation. However, only 16.7 percent reported dissatisfaction perhaps due to expectations, comorbidities, or multifactorial pain sources which the intervention did not address.

The significant positive correlation between early and final improvement percentages suggests that the early postoperative response could serve as a predictor of sustained benefit. This finding could be clinically relevant when determining the need for additional interventions or extended follow-up.

Limitations:

This study has several limitations: This is a single-center study with a small sample size (n=60) and thereby some limitations in the ability to characterize the population's generalizability of the results. These findings were validated in future randomized controlled trials with larger cohorts and longer follow-up periods.

Conclusion:

Intraoperative sacroiliac joint injection is a safe and effective addition to lumbar spine surgery for patients with coexisting sacroiliitis. It gives excellent short-term to mid-term pain relief with high patient satisfaction. However, its effectiveness may decrease with time or be diminished by the degree of spinal fusion.

References

1- BARONIO M., SADIA H., PAOLACCI S., PRESTAMBURGO D., MIOTTI D., GUARDAMAGNA V.A., et al.: Etiopathogenesis of sacroiliitis: Implications for assessment and management. Korean J. Pain, Oct 1; 33 (4): 294–304, 2020. Available from: http://www.epain.org/journal/view.html?doi=10.3344/kjp.2020.33.4.294.

2- SLOBODIN G., HUSSEIN H., ROSNER I. and ESHED I.: Sacroiliitis – early diagnosis is key. J. Inflamm Res., Sep. Volume 11: 339–44, 2018. Available from: https://www.dovepress.com/sacroiliitis-early-diagnosis-is-key-peer-reviewed-article-JIR.

3- CERESER L., ZANCAN G., GIOVANNINI I., CICCIÒ C., TINAZZI I., VARIOLA A., et al.: Asymptomatic sacroiliitis detected by magnetic resonance enterography in patients with Crohn's disease: Prevalence, association with clinical data, and reliability among radiologists in a multicenter study of adult and pediatric population. Clin Rheumatol., Aug 7; 41 (8): 2499–511, 2022. Available from: https://link.springer.com/10.1007/s10067-022-06143-w.

4- VIROLI G., CERASOLI T., BARILE F., MODEO M., MANZETTI M., TRAVERSARI M., et al.: Diagnosis and treatment of acute inflammatory sacroiliitis in pregnant or post-partum women: A systematic review of the current literature. Musculoskelet Surg., Jun 20; 108 (2): 133–8, 2024. Available from: https://link.springer.com/10.1007/s12306-023-00786-x.

5- KOHEIL A., DORGHAM D. and SHABAN M.: Sacroiliitis Following Lumbosacral Fixation: Prevalence and Management. Pan Arab J. Neurosurg., Jun 1; 16 (1): 2–5, 2021. Available from: https://pajn.journals.ekb.eg/article_180454.html.

6- GARTENBERG A., NESSIM A. and CHO W.: Sacroiliac joint dysfunction: Pathophysiology, diagnosis, and treatment. Eur. Spine J., Oct 16; 30 (10): 2936–43, 2021. Available from: https://link.springer.com/10.1007/s00586-021-06927-9.

7- RASHBAUM R.F., OHNMEISS D.D., LINDLEY E.M., KITCHEL S.H. and PATEL V.V.: Sacroiliac Joint Pain and Its Treatment. Clin Spine Surg A Spine Publ., Mar; 29 (2): 42–8, 2016. Available from: https://journals.lww.com/01933606-201603000-00002.

8- BOODY B., CABALLERO J., MACADAEG C., FUNK R. and MACADAEG K.: Intra-Articular Sacroiliac Joint Injection. Clin. Spine Surg. A Spine Publ., Feb; 34 (1): 14–6, 2021. Available from: https://journals.lww.com/10.1097/BSD.0000000000001010.

9- BRONSARD N., PELLETIER Y., ANDRÉANI O., DE PERETTI F. and TROJANI C.: O-arm-guided sacroiliac joint injection: New techniques with reflux test. Orthop. Traumatol. Surg. Res., Apr; 106 (2): 281–3, 2020. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1877056819303652

10- SHRIVER M.F., ZEER V., ALENTADO V.J., MROZ T.E., BENZEL E.C. and STEINMETZ M.P.: Lumbar spine surgery positioning complications: A systematic review. Neurosurg Focus, Oct; 39 (4): E16, 2015. Available from: https://thejns.org/view/journals/neurosurg-focus/39/4/article-pE16.xml.

11- PRADEEP K. and PAL B.: Biomechanical and clinical studies on lumbar spine fusion surgery: A review. Med. Biol. Eng. Comput., Mar 4; 61 (3): 617–34, 2023. Available from: https://link.springer.com/10.1007/s11517-022-02750-6.

12- FALOWSKI S., SAYED D., POPE J., PATTERSON D., FISHMAN M., GUPTA M., et al.: A Review and Algorithm in the Diagnosis and Treatment of Sacroiliac Joint

Pain. J. Pain Res., Dec; Volume 13: 3337–48, 2020. Available from: https://www.dovepress.com/a-review-and-algorithm-in-the-diagnosis-and-treatment-of-sacroiliac-jo-peer-reviewed-article-JPR.

13- AB AZIZ S.N.F., ZAKARIA MOHAMAD Z., KARUPIAH R.K., CHE AHMAD A. and OMAR A.S.: Efficacy of Sacroiliac Joint Injection With Anesthetic and Corticosteroid: A Prospective Observational Study. Cureus, Apr 11; 2022. Available from: https://www.cureus.com/articles/84752-efficacy-of-sacroiliac-joint-injection-with-anesthetic-and-corticosteroid-a-prospective-observational-study.

14- TALLEY N.J. O.S.: Clinical Examination. A systemic guide to physical diagnosis. 7th Edition. Elsevier Heal Sci. 2014; Available from: https://shop.elsevier.com/books/clinical-examination/talley/978-0-7295-8147-9.

15- SCHNEIDER B.J., EHSANIAN R., HUYNH L., LEVIN J., ZHENG P. and KENNEDY D.J.: Pain and Functional Outcomes After Sacroiliac Joint Injection with Anesthetic and Corticosteroid at Six Months, Stratified by Anesthetic Response and Physical Exam Maneuvers. Pain Med. 2020 Jan;21(1):32–40.

16- COHEN S.P.: Sacroiliac Joint Pain: A Comprehensive Review of Anatomy, Diagnosis, and Treatment. Anesth. Analg., Nov; 101 (5): 1440–53, 2005.

17- SLIPMAN C.W., STERENFELD E.B., CHOU L.H., HERZOG R. and VRESILOVIC E.: The predictive value of provocative sacroiliac joint stress maneuvers in the diagnosis of sacroiliac joint syndrome. Arch. Phys. Med. Rehabil., Mar; 79 (3): 288–92, 1998.

18- MAIGNE J.Y. and PLANCHON C.A.: Sacroiliac joint pain after lumbar fusion. A study with anesthetic blocks. Eur. Spine J., Sep; 14 (7): 654–8, 2005.

19- DEPALMA M.J., KETCHUM J.M. and SAULLO T.R.: Etiology of Chronic Low Back Pain in Patients Having Undergone Lumbar Fusion. Pain Med., May; 12 (5): 732–9, 2011.

20- COLÒ G., CAVAGNARO L., ALESSIO-MAZZOLA M., ZANIRATO A., FELLI L. and FORMICA M.: Incidence, diagnosis and management of sacroiliitis after spinal surgery: A systematic review of the literature. Musculoskelet Surg., Aug; 104 (2): 111–23, 2020.

21- KATZ V., SCHOFFERMAN J. and REYNOLDS J.: The Sacroiliac Joint: A Potential Cause of Pain After Lumbar Fusion to the Sacrum. J. Spinal Disord Tech., Feb; 16 (1): 96–9, 2003.

22- HA K.Y., LEE J.S. and KIM K.W.: Degeneration of Sacroiliac Joint After Instrumented Lumbar or Lumbosacral Fusion. Spine (Phila Pa 1976), May; 33 (11): 1192–8, 2008.

23- RUFFILLI A., CERASOLI T., BARILE F., MANZETTI M., VIROLI G., TRAVERSARI M., et al.: Injective Treatments for Sacroiliac Joint Pain: A Systematic Review and Meta-analysis. Indian J. Orthop., Jun; 58 (6): 637–49, 2024.

24- IVANOV A.A., KIAPOUR A., EBRAHEIM N.A. and GOEL V.: Lumbar Fusion Leads to Increases in Angular Motion and Stress Across Sacroiliac Joint. Spine (Phila Pa 1976), Mar; 34 (5): E162–9, 2009.

تقييم النتائج الجراحية لحقن التهاب المفصل العجزى الحرقفى فى نفس جلسة جراحات القطنية

الخلفية: لا يزال ألم أسفل الظهر المستمر بعد جراحة العمود الفقرى القطنى مصدرًا رئيسيًا لعدم رضا المرضى وعبئًا على الرعاية الصحية. فى حين أن عوامل مختلفة تساهم فى ألم أسفل الظهر بعد الجراحة، إلا أن المفصل العجزى الحرقفى يُعترف به بشكل متزايد كمصدر شائع للألم، وغالبًا ما يكون غير مُشخّص، وخاصةً لدى المرضى الذين يعانون من تغيرات فى الميكانيكا الحيوية للعمود الفقرى بعد عملية دمج الفقرات القطنية. قد يتم تجاهل التهاب المفصل العجزى الحرقفى (SI) فى الفحص الطبى قبل الجراحة، مما يؤدى إلى استمرار الأعراض على الرغم من نجاح جراحات العمود الفقرى تقنيًا. قد يوفر علاج أمراض المفصل العجزى الحرقفى أثناء جراحة العمود الفقرى نهجًا أكثر شمولًا وفعالية لعلاج الألم.

الطريقة: خضع ستون مريضًا مصابًا بالتهاب المفصل العجزى الحرقفى قبل الجراحة، والذين شاركوا فى هذه الدراسة، لجراحة فى العمود الفقرى القطنى. حُقن جميع المرضى أثناء الجراحة بمخدر موضعى وكورتيزون فى مفصل العجز الحرقفى. قُيّمت شدة الألم باستخدام مقياس التناظر البصرى (VAS) قبل العملية، وبعد ٣ أشهر، وبعد ٦ أشهر. كانت النتيجة النهائية الرئيسية المُقاسة هى نسبة التحسن فى درجات مقياس التناظر البصرى. وشملت النتائج الأخرى رضا المرضى وارتباط المتغيرات السريرية والجراحية بتحسن الألم.

النتائج: قبل الجراحة، بلغ متوسط درجة مقياس تقييم الألم البصري (VAS) ٦,٤٧±١,٤٤، وانخفض بشكل ملحوظ (p<٠,٠٠١) إلى ٣,١٧±١,٧١ بعد ٣ أشهر، ثم إلى ٣,٧٠±٢,٢٣ بعد ٦ أشهر (p<٠,٠٠١ مقارنةً بخط الأساس). بلغت النسبة ٥٠,٧٩٪ بعد ٣ أشهر، و٣٦,٦٧٪ بعد ٦ أشهر. بعد ٣ أشهر، سُجّلت نسبة رضا أو رضا تام لدى ٦٣,٣٪ من المرضى. ولوحظ وجود ارتباط قوى وإيجابى بين تحسن الألم المبكر (بعد ٣ أشهر) والتحسن النهائى (بعد ٦ أشهر) (r=٠,٧٣٠، p<٠,٠٠١). كما وُجد ارتباط سلبى ذى دلالة إحصائية (r=-٠,٢٨٣؛ p=٠,٠٢٨) بين عدد مرات إجراء الجراحة والتحسن بعد ٣ أشهر. لم يتم العثور على أن الجنس أو العمر أو تثبيت الفقرة S1 أو اندماج الفقرات بين الفقرات مرتبط بتحسن كبير فى الألم إحصائيًا.

الاستنتاج: يقدم حقن المفصل العجزى الحرقفى أثناء الجراحة استراتيجية واعدة وقليلة التوغل لتقليل آلام ما بعد الجراحة لدى المرضى الذين يعانون من التهاب مصاحب فى المفصل العجزى الحرقفى ويخضعون لجراحة دمج الفقرات القطنية. كان تخفيف الألم أكثر وضوحًا بعد ٣ أشهر، مع استمرار جزئى للتحسن بعد ٦ أشهر. ويبدو أن الاستجابة المبكرة تُنبئ بتحسن طويل الأمد.