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Research Article

A prospective achievement study of arthritis of facet joints in misan province

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Abstract

Background: Back pain is a common problem and a main cause of disability. Facet Joint Arthritis (FJA) is the common cause of Low Back Pain (LBP). The study aimed to determine the incidence of FJA in patients suffers from low back pain.

Methods: 50 participants with low back pain were examined at the Orthopedics Clinic of Orthopedic Department in Al-Zahrawi Hospital. Those diagnosed with FJA. We described an Extra-Articular Block (EAFB), and follow up for three months.

Results: BMI of patients, distribution, and type of pain, levels affected, and radiological abnormalities showed a significant association with FJA.

Conclusion: FJA can be diagnosed clinically, and radiologically. Confirmation of the diagnosis can be done either by local injection, and/or medial branches blocks.

Keywords: FJA, LBP, orthopedics, local injection, EAFB

INTRODUCTION

Low back pain is the second cause of a medical orthopedics clinic setting and a leading cause of disability [1]. The facet joints arthritis is un-seen in patients with chronic low back pain [2]. Deformity in the morphology of the joints and a disparate coronal orientation between the left and right joints can make an asymmetrical stress distribution in the disc and zygapophyseal tissues [3]. Imbalance and asymmetrical loading of the joints provide the creation of osteophytes, cartilage erosion, fibrillation, reduction in the joint space and neural foramen, and formation of synovial cysts [4]. Chronic low back pain resulted from pathologic changes in the facet joints, located in the posterolateral angles of the spine, and it is represented as a deep ache, made worse with twisting, lateral bending, and hyperextension [5]. Clinical diagnosis is a golden way for diagnosis besides radiological examination [4]. Short courses of non-opioid medication and a meticulous physical therapy program is the initial methods of management, but when fail, medial branch blocks, followed by radiofrequency ablation, may be of benefit, whereas if progressive neurologic symptoms are prominent, and surgical options may be mandatory [6].

MATERIALS AND METHODS

Study Design and Setting

A prospective study was conducted in the Orthopedic Department, Al-Zahrawi Hospital, during the period from the 1st June 2018 to the 31st of June 2019. We enrolled 50 cases complaining of low back pain.

Inclusion criteria:

1. An adult patient aged 18 to 60 years old.
2. Low back pain for at least 3 months duration.

Exclusion criteria:

Inflammatory arthritis.

1. History of trauma.
2. Cauda equina syndrome.
3. Excluded Patients

All data collected included duration and severity of LBP, exacerbating and relieving factors, sites of referred pain, associated symptoms, influence on the lifestyle, treatment options, past surgical and medical history, and job history.

Clinical Diagnostic Criteria

1. Conventional medical practice included: gait, range of spinal movement, flexion-extension, and rotation, the examination of other joints (shoulder, hip, or sacroiliac joints).
2. Neurological examination: motor, sensory, and reflexes.
3. Low back pain is a deep ache, made worse with twisting, lateral bending, and hyperextension, with no distal real motor or sensory deficit.

Surgical Procedure

Medical intervention was done while the patient in the prone position. Under fluoroscopic guide, a 22-gauge spinal needle is inserted toward the target sites, and inject 0.5 ml-1 ml of the prepared medication at every site (lidocaine 1% mixed with long-acting steroid, methylprednisolone 40 mg, dilution with NS to be in a concentration of 8 mg/ml). Anatomically, injection of affected level with the level above, because every facet joint innervated from two roots. The patients kept for ½-1 hour under observation, then discharge, and re-evaluate after 2 weeks, 1 month, 3 months, and 6 months interval. A positive response was manifested if >50% pain relief.

Table 1. Low Back Pain (LBP) characteristics

Variables		LBP	
		No.	%
Onset	Sudden	12	24
	Gradual	38	76
Manifestations	Gluteal pain	25	50
	Neurological signs	15	30
	Intermittent claudication	10	20
Outcome	Good	35	70
	Worse	15	30
Types	Mechanic	20	40
	Non-mechanic	30	60
Level	Single	15	30
	Multiple	35	70
Radiology	FJA	34	68
	Spinal stenosis	16	32

Table 2. Logistic regression analysis

Characteristic Features	p-value	OR	95% CI
Gender	0.063	2.45	0.75-3.25
Old age	0.012	10.75	10.01-11.83
Long duration	0.05	17.02	12.92-24.86
Late onset	0.06	6.01	2.54-9.78
Lumber	0.05	14.34	11.55-27.42
Multiple level	0.04	12.88	10.92-19.46

Ethical Approval and Patients' Consent

After acceptance and approval of the Scientific Committee of Al-Zahrawi Hospital, this study was conducted under order No. 106. Written informed consent was obtained from all participants.

Statistical Analysis

We used SPSS version 24 (New York, US). We used the Chi-square test, Fischer's test. Results were considered statistically significant if the p-value was <0.05.

RESULTS

The study sample was composed of 25 (50%) females with a mean age of 46.32 ± 11.46 years, and 25 (50%) males with a mean age of 44.65 ± 16.88 years. The onset of pain was sudden in 24% and it was gradual in 76% of patients. Out of 50 patients, 50% of them complained of gluteal pain. The outcome was good in 70% of patients after intervention. The frequent type of pain was the non-mechanic in 60% of the sample. The multiple levels of FJA were prominent in 70% of patients. In 68% of patients, the radiology findings showed FJA. (Table 1)

By performed the logistic regression analysis to confirmed the relation between each variable on FJA during the intervention. The old age, long duration, late-onset, lumber regions, and multiple levels can worsen the outcome of intervention (OR:10.75; P=0.012), (OR:17.02; P=0.05), (OR:6.01; P=0.06), (OR:14.34; P=0.05), (OR:12.88; P=0.04), respectively (Table 2).

DISCUSSION

The FJA was common, and mostly affected old age, chronic history of LBP, of late-onset, mostly lumbar vertebrae, and of multiple levels.

A study done by Sangbong Ko et al. [7], reported a high association of lumbar spine and FJA. Also, they found that the prevalence of FJA was not related to gender, or with the presence of LBP, but increased with older age.

Regarding the methods of diagnosis, the evaluation of radiological findings should be cautious and correlated with the clinical findings

for diagnosis and further management. It is the collection of clinical and imaging observations rather than any single sign that demonstrate the diagnosis.

In a systematic review, the authors applied a systematic evidence-based assessment methodology of controlled trials of diagnostic validity and randomized controlled trials of therapeutic efficacy. The pain relief of >50% was the outcome measure for diagnostic accuracy assessment of the controlled studies with the ability to perform previously painful movements. While for randomized controlled therapeutic efficacy studies, the primary outcome was significant pain relief and the secondary outcome was a positive change in functional status. This review provided significant evidence for the diagnostic validity of facet joint nerve blocks, and moderate evidence for therapeutic radiofrequency neurotomy and therapeutic facet joint nerve blocks in managing chronic low back pain [3,8-10].

A prospective study conducted to determine the prevalence of facet joint pain, and to assess the influence of various factors on the prevalence of facet joint pain in 1999, found that the prevalence of facet joint pain in

the lumbar region was (45%), also they found that factors like gender, age of the patients, mode of onset of the pain, and duration of the pain, all had no significant correlation on the diagnosis, while the presence of previous surgery was significantly affect the diagnosis [11].

CONCLUSION

We thought that FJA has received far fewer studies than other important osteoarthritis phenotypes such as knee osteoarthritis, and other features of spine pathologies such as degenerative disc disease. The diagnosis was done clinically, rather than a collection of clinical and radiological features. The diagnosis can be confirmed by local injection, intra-articular or extra-articular, single blocks.

DISCLOSURE OF INTEREST

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