



## A cross-sectional study of 120 patients to know the role of anesthesia on patients who underwent hip arthroscopy

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### ABSTRACT

Hip arthroscopy is a procedure in which some diseases that were traditionally performed by open surgery are attempted to be corrected. It is a technically complex and generally long-term procedure. Femorofemoral impingement is the most common disease and has various causes that lead to it. This paper aims to know the role of anesthesia on patients who underwent hip arthroscopy between 20-55 ages. A specific questionnaire was applied to 120 patients, 70 general anesthesia with aged between 25 and 50 years from several different hospitals and 50 regional anesthesia between 25 and 50 years. A questionnaire was designed by experts from the Hip Arthroscopy Technical Group of the Ministry of Public Health, and a database was created using Microsoft Access. The result which found in this paper were (120 cases collected divided to general anesthesia (N=70), where 25 were male and 45 were female for general anesthesia, while Regional anesthesia (N=50), where 18 were male and 32 female). The study revealed a high body mass index for patients over the age of 33 years, 50 cases of patients were diagnosed with 64% of women patients group 34-50 kg/m<sup>2</sup>. Days of hospitalization, the median (IQR) for a patient with general anesthesia was 8 (6 to 10) days, and about regional anesthesia was 6(4 to 8). In addition, most of the patients' cases under general anesthesia were found to suffer from acute pain after surgery as compared with regional anesthesia in 45 cases with p < 0.05.

### Keywords:

Regional anesthesia, General anesthesia, Hip arthroscopy, ASA%.

## Introduction

Anesthesiologists are faced with new surgical procedures every day, although they can be performed using traditional anesthesia schemes, so knowing and understanding the details of each intervention may become important to highlight all aspects that allow optimal anesthesia care and that are close to perfection that we seek in daily practice. [1]

Hip arthroscopy is a procedure in which an attempt is made to correct certain diseases that were traditionally performed by open surgery. It is a technically complex and generally long-term procedure. Acetofemoral impingement is the most common pathology performed and for the various reasons that lead to it. [2]

The surgery is done, causing moderate to severe pain. Attempts have been made to reduce its severity, specifically by performing a lumbar plexus block. However, previous studies found no effect of different anesthesia techniques on pain scores after surgery. [3]

Patients scheduled for this procedure are generally young, and therefore in preoperative evaluation, there are no problems or discomforts that differ from other patients of similar age and physical condition. - The expected bleeding is low and does not constitute a special problem, so no blood reserve is made. [5]

Arthroscopy is performed under general anesthesia and in the operating room, where

## Material and method

### Collection sample

An observational, descriptive, and retrospective study on patients with underwent hip arthroscopy for Iraqi patients was conducted with data collected from several different hospitals in Baghdad, Iraq, from October 2020 to September 2021.

In this study, 120 hip arthroscopy patients who agreed to participate in the study were recruited. [9]

### Method

A specific questionnaire was applied to 120 patients aged between 25 and 55 years from October 2020 to September 2021 in several different hospitals. [10]

simple diagnostic procedures can be performed under local anesthesia, but local or general anesthesia is used for arthroscopy. The inside of the joint is inflated with a fluid to provide an image, and thus the size of the joint increases 4-6 times during the operation so a detailed diagnosis can be made. Since the camera can also view areas that are not easily accessible during the open procedure, a better diagnosis can be made. [6,12,13]

Due to the studies of Karl Rein (2007), general anesthesia of the hip joint was used in surgical operations in Germany, where some complications occurred that led to its discovery, such as swelling and thrombosis, and other conditions resulting from deep vein thrombosis and damage to the blood arteries, which led to damage to the joints. Previous studies reported that the rate of these complications is very low and ranges between 2-4 percent. [7,14]

Previous studies have shown that the anesthesia technique is a good technique for patients because it is associated with less consumption of opioids during and after surgery. However, even though this technique shows a tendency to deliver lower VAS, the difference is not significant when compared to other types of anesthesia. [8]

This paper aims to know the role of anesthesia on patients who underwent hip arthroscopy. Exclusion criteria included patients with a history of patients to know the role of anesthesia on patients who underwent hip arthroscopy whose partner was diagnosed as with anaesthesia. In addition, this study applied on different sex, female and male, where females included 45 for general anesthesia and 32 for regional anesthesia, while 25 males were for general anesthesia and 18 for regional anesthesia. [11]

Through a review of the international literature, risk-demographic factors (age, level of economy, pain scores, smoking, and ASA) were suggested; and social, healthy factors (smoking, age, economy).

### Statistical analysis

A questionnaire was designed by experts from anesthesia on patients who underwent hip arthroscopy Group of the Ministry of Public Health, and a database was created using Microsoft Access; statistical analysis was performed using IBM SOFT SPSS 22 for Windows, and the final document was prepared with Microsoft Office package.

To determine the factors associated with anesthesia on patients who underwent hip arthroscopy for patients, monodispersal logistic regression was used as a statistical method.

### Ethical approval

Ethical and scientific rules have been considered to collect patient demographic data and information that are based on internationally accepted guidelines to preserve the rights, safety, and health of patients participating in this study. The autonomy of the patient and consent to provide the requested information, as well as the confidentiality of personal data, were also respected.

To apply the techniques and methodological procedures, permission and approval were received from the implementing authorities for the purpose of create this study.

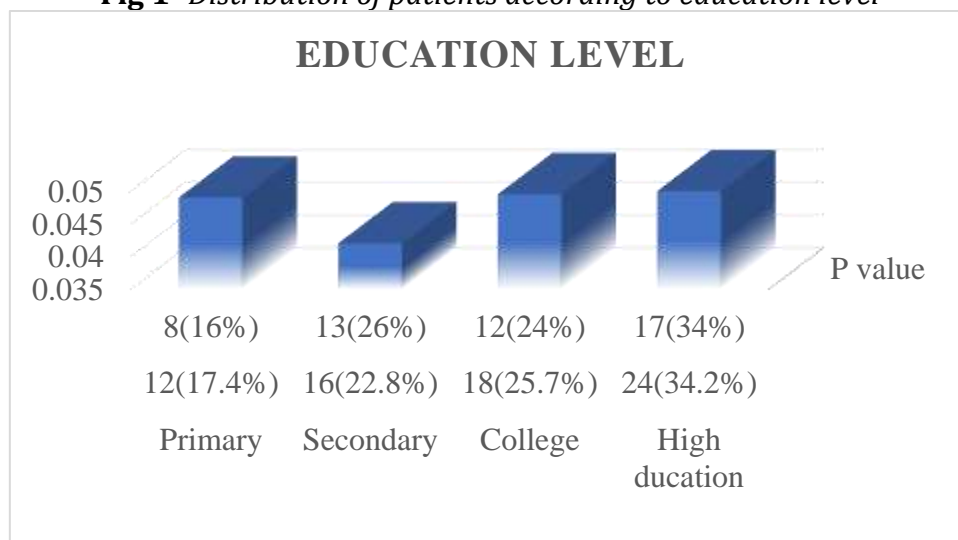
### Results

**Table 1- Characterises demographic results of patients**

Variables	General anesthesia (N=70)	Rigional anesthesia (N=50)	P-value
<b>Age, N (%)</b>			
20-34	14 (20%)	12 (17.14%)	0.049
35-44	23 (32.8%)	18 (25.7%)	0.042
45-55	33 (47.14%)	20 (28.5%)	0.035
<b>Sex</b>			
Male	25 (35.7%)	18 (36%)	0.0498
Female	45 (64.28%)	32 (64%)	0.05
<b>BMI, %</b>			
20-34	14 (20%)	10 (14.2%)	0.032
36-44	20 (28.5%)	14 (20%)	0.024
46-55	36 (51.42%)	26 (37.14%)	0.026
<b>Comorbidities</b>			
Cardiovascular	8 (11.42%)	6 (12%)	0.045
diabetes	14 (20%)	13 (26%)	0.038
Arterial hypertension	12(17.14%)	7 (14%)	0.035
Obesity	21(30%)	16 (32%)	0.047
Deep vein thrombosis	15(21.42%)	8 (16%)	0.033
<b>Smoking</b>			
Yes	45(64.28%)	12 (24%)	0.024

No	25(35.7%)	30 (60%)	0.022
ASA%			
I	34(48.57%)	36 (72%)	0.038
II	36(51.4)	14 (28)	0.04
<b>Economic level</b>			
low	30(42.5%)	15 (30%)	0.043
Moderate	25(35.7%)	25 (50%)	0.035
High	15(21.42%)	10 (20%)	0.05
Technical level of surgeons, No. (%)			
Senior	40(57.1)	33 (66)	0.66
Junior	30(42.8)	17 (34)	0.06

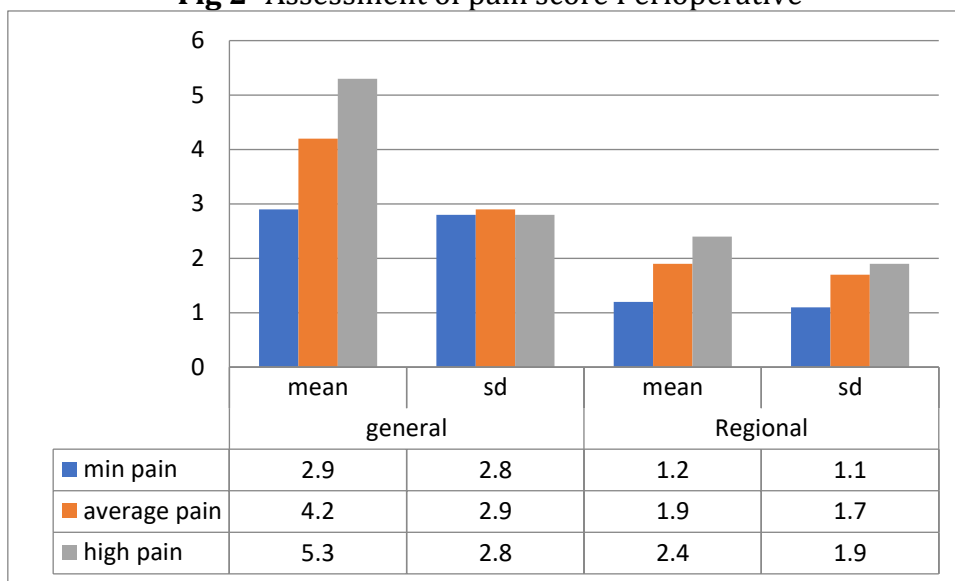
**Fig 1- Distribution of patients according to education level**



**Table 2- Maternal scores before and after surgery**

Variables	General anesthesia (N=70)	Regional anesthesia (N=50)	P-value
Fascia block before surgery	60(85.1%)	35(35%)	0.0496
Surgery Minutes	104±27.7	120.1±25.9	0.0466
PACU min	177.9±90.9	233±87.8	0.038
Straight Cath within 24 hrs (y/n) N (%)	5(7.1)	5(10)	0.83
Duration of anesthesia, median (IQR), hc	2.0 (1.4-2.5)	2.0 (1.55-2.5)	0.98
Days of hospitalization, median (IQR)	8 (6 to 10)	6(4 to 8)	0.01

**Fig 2- Assessment of pain score Perioperative**



**Table 3- Logistic regression for a patient-risk factors analysis**

Variables	General anesthesia	Regional anesthesia	P-value
<b>Age, N (%)</b>			
20-34	0.9 (0.7-1.1)	0.8 (0.6-1.0)	0.65
35-44	1.1 (0.86-1.2)	1.0 (0.7-1.2)	0.87
45-55	1.34 (0.98-1.66)	1.23 (1.0-1.5)	0.085
<b>BMI, %</b>			
46-55	2.76 (1.9-5.5)	1.87 (1.4-2.5)	0.026
<b>Comorbidities</b>	1.66 (1.1-2.4)	1.44 (1.1-1.8)	0.01
<b>Pain score</b>	4.4 (3.1-8.9)	1.3 (0.9-1.8)	0.04

**Table 4- person correlation between Adverse Events with the type of anaesthesia**

<u>Variable</u>	<u>Adverse Events</u>	<u>General</u>	<u>Regional</u>
<u>R correlation</u>	<u>1/0</u>	<u>+0.66</u>	<u>-0.234</u>
<u>Sig</u>	--	0.04	<u>0.6</u>
<u>N</u>	120		

**Discussion**

In this study, 120 patients in Iraq were collected and distributed according to the anesthesia on patients who underwent hip arthroscopy. (120 patients under General anesthesia and 80 under Regional anesthesia), and the average age in this study ranged

between 20-55 years. This study was settled for General anesthesia, with 25 males and 45 females, while Regional anesthesia had 18 males and 32 females. [16] The most frequent ages in this study were from 35-44 for 41 patients with 25% of the patients'

group, and for 32 women with 64%, and 18 for males with (36%). According to BMI percentage, the patients range between 36-44 in the percentage of 28.5% and 20%.

The study revealed a high body mass index for women over the age of 40 years; 32 women were diagnosed with 64% of the patient's group, 20-44 kg/m<sup>2</sup>.

The study also revealed the presence of 64.28% of patients under general anesthesia who smoke, and this is an influencing factor in anesthesia on patients who underwent hip arthroscopy as shown in Table 1.

This study is of great importance both in the clinical practical field and in the theoretical field because, thanks to this, we have a better view of the determinants that may be associated with anesthesia. A significant association was found in general anesthesia over 30 years of age, a finding like the studies of Iren. [15,16,17]

### Conclusion

For hip arthroscopy, administration of a general anesthetic with multimodal analgesics and peripheral nerve block significantly increased postoperative pain scores in the PACU and reduced perioperative opioid use compared with regional anesthesia combined with multimodal analgesics and peripheral nerve block. However, this technique may result in urinary retention and a longer recovery time in the pediatric intensive care unit. In addition, general anesthesia increased pain intensity at ages 33-55.

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Lyon CR 2009, who also found an association between these two variables were, determined that 60% of patients of hip arthroscopy under general anesthesia who between the ages of 32 and 55 are the struggle of pain after surgery more than patients who under Regional anesthesia. [18] In the same way, Anastasia and Marina determined that age was a risk factor associated with Anastasia during surgery of hip arthroscopy with a value of  $p < 0.05$ .

An observational study of 60 patients in the municipality of Rio de Janeiro determined that more than half of them had at least one Joint damage. The Regional anesthesia use as a method of to prevent pain hip arthroscopy is one of the most important factors in the in the surgery future. [19]

Another recent study conducted in Las Tunas County identified a high rate of pain in his arthroscopy in the anesthesia of women. [20].

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