



■ Original Article

## Turkish orthopedists do not use anesthetics methods always for reduction of Colles fractures

### *Türk ortopedistler Colles kırığı redüksiyonunda her zaman anestezi yöntem tercih etmezler*

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#### ABSTRACT

**Aim:** This study determines the current anesthetic approach for the reduction of a Colles fracture among Turkish orthopedists.

**Material and Method:** An online survey was conducted to determine the approach and beliefs about anesthetic use in fracture reduction among Turkish orthopedists who are registered to Turkish orthopedic communities by sending them invitations.

**Results:** Approximately 50% of the Turkish orthopedists never use anesthetic methods for the reduction of Colles fractures. This rate is 72% for residents. Most common excuses for such a practice were to finish the job quickly (53%) and belief of unnecessary of the anesthesia in such a quick procedure (58%).

**Conclusion:** Most of the Colles fractures in Turkey are being reduced without any kind of anesthesia. More than a half of the Turkish orthopedists do not believe the necessity of anesthesia in such a quick procedure. Risky and time-consuming anesthetic methods for such a quick procedure are not approved by the majority of Turkish orthopedists.

**Keywords:** fracture, reduction, anesthesia, Colles, Turkish

**ÖZ**

**Amaç:** Bu çalışmayla Türk ortopedistlerin Colles kırığı redüksiyonu yaparken kullandıkları anestezi yaklaşımını ve bunun nedenlerini belirlemek amaçlanmıştır.

**Gereç ve Yöntem:** Türk ortopedi cemiyetlerine üye hekimlere davetiye gönderilerek çevrimiçi anketimize katılmaları istenmiştir.

**Bulgular:** Türk ortopedistlerin takriben %50'si Colles kırığı redüksiyonu için herhangi bir anestezi yöntemi kullanmamaktadır. Bu oran asistanlarda %72'dir. Anestezi yöntemi kullanmama için en sık bahaneler %58 ile "bu kadar kısa bir işlem için anestezi gerektiğine inanmama" ve %53 ile "iş çabuk bitirmek için"dir.

**Sonuçlar:** Türkiye'de Colles kırıklarının çoğu hiçbir anestezi yöntemi kullanılmadan redükte edilmektedir. Türk ortopedistlerin yarısından fazlası bu işlem sırasında anestezinin gerekliliğine inanmamaktadır. Bu kadar basit ve kısa bir işlem için riskli ve uzun anestezi yöntemlerinin kullanılması Türk ortopedistlerinin çoğunun onayladığı bir yöntem değildir.

**Anahtar kelimeler:** kırık, redüksiyon, anestezi, Colles, Türk

**INTRODUCTION**

For an urban scenario, more than one fourth of all fractures are distal radius fractures in Turkey [1]. Colles fractures are mostly treated by closed reduction and casting. Fracture reduction is painful. Therefore, various anesthetic techniques including hematoma block (HB), peripheral nerve block (PNB), intravenous regional anesthesia (IVRA), procedural sedation (PS), and even general anesthesia were recommended in all the mainstream textbooks and guidelines for reduction pain. Anesthetic methods vary depending on the doctors' choice or the facilities resources. Reducing the cost and the waiting time of the patient are also concerns [2-7].

However, these procedures are not commonly used for fracture reductions in Turkey.

The main purpose of this study was to determine and document the current situation, find the causes that lead such an approach and inform the medical community about this.

**MATERIAL AND METHOD**

An online survey link was sent to the e-mails of orthopedic surgeons registered to Turkish orthopedic communities (Totder, Turk orthopod). Current approach and beliefs about anesthetic use in fracture reduction were determined among 302 physicians. Participants were informed about the purpose of the survey. We acquired study approval from our institute's ethical committee. All data were analyzed by using SPSS Statistics version 22.0 software (SPSS Inc, IBM, Chicago, IL, USA).

**RESULTS**

A total of 302 orthopedists responded to the online survey. 39 (13%) were residency students and 263 (87%) were surgeons. The mean time spent as a surgeon was 9.7 years (1-43 SD: 8).

Overall, 48% of the surgeons never use any kind of anesthetic method, within residency students this ratio was 72%.

Anesthetic use according to experience was shown on **Table 1**.

**Table 1.** Anesthetic usage rate according to the experience

Experience	Anesthetic Use (%)	
	Never	Always
1-10 Years	61	9
10-20 Years	34	21
>20 Years	14	45

For adult and pediatric patients, anesthetic usage attitudes were shown on **Table 2**.

**Table 2.** Anesthetic usage on adults and children

	For Adults (%)	For Children (%)
Never Use	42	52
Occasionally (<50%)	28	23
Usually (>50%)	15	10
Always	15	15

For those respondents who do not routinely use or never use anesthetic techniques for the reduction of a Colles fracture; the reason for their practice and the complication beliefs were asked. The questions were multi-choice and the results were shown on **Table 3**.

**Table 3.** Motives and beliefs of the respondents who sometimes or never use any anesthetic method for the reduction of a Colles fracture

MOTIVE FOR THE PRACTICE	Sometimes (%)	Never (%)
To finish my job quickly	34	53
Fear of complications	44	44
It is not in my doctrine; I'm not accustomed to it	20	37
Procedure is quick and easy. I do not think it is necessary	38	58
I have no logical explanation. I am too lazy to do that, acting arbitrarily	2	1
<b>COMPLICATION BELIEFS</b>		
There is a risk of osteomyelitis by inoculation during hematoma block	41	53
Cardiac or respiratory arrest might happen during sedation	71	67
Uncontrolled release of tourniquet might cause serious complications during *IVRA	32	37
Permanent damage may happen during peripheral nerve block	40	40
I do not agree with those above, but I act arbitrarily / too lazy to do it	15	17

\*IVRA: intravenous regional anesthesia

147 respondents who always or sometimes use anesthetic methods were asked for their choice of anesthesia; 130 (88%) used sedation, 15 (11%) used HB and 2 (1%) used IVRA.

Among those 147 respondents, 19 (13%) reported at least one complication experience due to anesthetic method.

One had infection after HB, 1 failed PNB, 13 respiratory problems after PS, 4 cardiac problems after PS and 1 convulsion after PS. In addition, one of the respondents reported violence by the child's parents after a respiratory complication.

Respectively 167 (55%) and 172 (57%) respondents told that they would approve a reduction without anesthesia if themselves or their children had such a fracture.

## DISCUSSION

There are 2757 orthopedics and traumatology surgeons actively working in Turkey according to Turkish Statistical Institute reports [8]. With 302 respondents of our survey, we approached approximately 10% of the Turkish orthopedic surgeons.

Our results showed that almost 50% of the Turkish orthopedists never use an anesthetic method for the reduction of a Colles fracture. The most common excuse for such a practice was "to finish my job quickly." That excuse was also supported by the belief of "unnecessariness of the analgesia in such a quick and easy procedure."

Some anesthetic methods like PS and IVRA require an IV access. However, IV access is the leading cause of pain on par with postsurgical pain in children [9]. More than a half of the preadolescents and up to 83% of toddlers had reported severe distress from a simple venipuncture [9,10]. Furthermore, a successful IV access on a pediatric patient usually requires more than 2 attempts and more than 2 minutes at its best [11]. Another study about venipuncture pain among 7 to 11 ages old children reported an average pain score of 7.6 out of 10 [12]. Considering these, it sounds like a good compromise of the pain over suffering time, if the intensity of the pain is ignored.

In our survey, residency students seem to be the cruelest group with 72% never uses an anesthetic method for fracture reduction. 37% of the respondents who never use anesthesia reported that it was not in their doctrine. It was 20% with the ones who sometimes use anesthetic methods.

In training hospitals, practical procedures are usually taught by senior residents and done by the younger ones as they learn it. Even though the use of anesthesia is increasing with the experience (**Table 1**), it is uncommon that a senior surgeon in a training hospital performs fracture reductions in emergency department. That explains why it was not in their doctrine for many respondents. Residency students should be trained and encouraged to use anesthesia during fracture reductions.

Fear of complications was another concern for avoiding anesthesia with 44%. However, common beliefs for some are not so valid. For instance, one of the concerns for not using HB in our study was probability of osteomyelitis by inoculation. Up to 50% of the respondents agreed with that argument. However, studies showed HB is safe and the risk of infection is theoretical [13,14]. There is only one case report about osteomyelitis after a HB [15].

The most common complication belief that affects the decision of orthopedists in our survey was the cardiac and respiratory risks of PS. Also mostly reported complications in our survey were those.

There are several drugs in common use for PS. Midazolam, fentanyl and etomidate all has respiratory depression risks. With propofol that risk is up to 30%. Fasting is required for most. For all types of PS, at least two trained practitioners and close monitoring are recommended which also increases the cost [16]. Procedural sedation is time-consuming. Patients spend an average of 2.2 hours more time in the ED with PS and patient satisfaction is similar to HB [17]. Its use in such a quick procedure is questionable.

Both IVRA and PNB are also time-consuming, require special equipment and skilled physician and IV line which is not desirable for children. However, they are safer than Turkish orthopedists think. Large series reported no serious complications or mortality even in the case of uncontrolled cuff deflations during IVRA [18].

Reduction of Colles fracture without anesthesia is highly painful but only takes a couple of seconds and the intense pain decreases as soon as the maneuver ends. Needle phobia, especially in younger children, seems to cause as much distress. More than 50% of the orthopedists in Turkey approve such a reduction without anesthesia for themselves and their children. Turkish orthopedists should be educated well about this issue and should be encouraged to treat fractures in a more humane way. On the other hand, maybe, the necessity of relatively risky anesthetic methods, which involve venipunctures for such a quick procedure, should be reconsidered.

## CONCLUSION

Colles fractures in Turkey not always reduced with anesthesia. More than a half of Turkish orthopedists do not approve risky and time-consuming anesthetic methods for a quick procedure.

## DECLARATION OF CONFLICT OF INTEREST

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