# A NEW FORCEPS FOR BENDING KIRSCHNER WIRES: TECHNICAL NOTE

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## SUMMARY

**Introduction:** A new forceps is designed for bending the free ends of the Kirschner wires after interosseous fixation.

**Materials and Methods:** The bending forceps is made from steel and designed for Kirschner wires of diameter 1, 1.5, 2, 2,5, 3 mm.

**Results:** It was used in 20 different operations in 5 months without any problems.

**Conclusion:** The new bending forceps reduces the risk of symptomatic prominence of the Kirschner wires, skin breakdown and infection. The main purpose of designing the new bending forceps is to prevent any movements during the bending of the Kirschner wires.


**Key Words:** Kirschner Wire, Interosseous Fixation, Bending Forceps.


## ÖZET

KİRSCHNER TELİNİ EĞMEK İÇİN YENİ BİR FORSEPS

Kirschner teli ile yapılan interosseous fiksasyonunda, telin serbest ucunu eğmek için yeni bir forseps tasarlandı. Paslanmaz çelikten yapılan bu yeni forseps 1, 1.5, 2, 2.5, 3 mm çapında olan Kirschner telleri için kullanılabilir. Beş ay içerisinde yapılan değişik ameliyatlarda her hangi bir sorun oluşturmadan kullanıldı.

Yeni tasarlanan forsepsin kullanımı ile, Kirschner telinin cilt altında yarattığı çıkıntı ve bundan dolayı gelişen cilt perforasyonu ve enfeksiyon riskinin en aza indiğine inanıyorum.


**Anahtar Kelimeler:** Kirschner Teli, İnterosseous Fiksasyon, Eğici Forseps.

## INTRODUCTION

Kirschner wires are commonly used to provide interosseous fixation. There are many complications seen after the fixation with these wires[1-3]. Migration is one of them[4,5]. In order to prevent complication of migration, the distal ends of the wires must be bent. Many methods are currently used for bending the end of these wires[6,7]. For example, bending it using one forceps by leaning on the bone and by means of two forceps one of which is used for grasping the wire, while the other is used for bending it are two of these techniques currently employed. Yet another technique is using a metal pipe.

There are some disadvantages associated with these methods. The most frequent complication is symptomatic prominence of the Kirschner wires. There is a high possibility of skin breakdown and infection[8,3]. Another complication is the sliding of the Kirschner wires, which cause loosening while the bending process is performed.

İn order to prevent such complications a new bending forceps is designed.

## METHODS

The bending forceps is made from steel. It has two heads for bending Kirschner wires. One of them is a holder head including a groove on it, and the other is a bender head (Figure 1). If you insert the wire into the groove and press the arms of the forceps, the bender head pushes the wire and bends it with a sharp angle of 80° in the direction you want (Figure 2). The procedure is finished when you remove the wire from the groove. The new forceps is designed for Kirschner wires of diameter 1, 1.5, 2, 2.5, 3 mm.

## RESULTS

The forceps can easily be used with one hand and forms a suitable sharp angle at the end of the wire. I have performed 20 operations in 5 months using the new forceps without any problems and have confirmed its usefulness.

## CONCLUSION

Bending the wire with a sharp angle, allows the wire to contact the bone so that skin perforations are avoided. By means of this new forceps the

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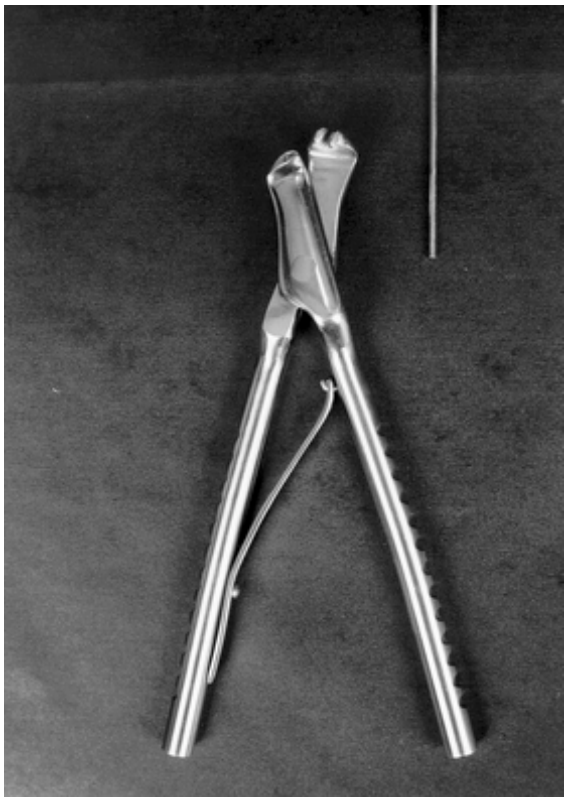

**Resim 1:** Opposite view of the forceps.

**Resim 2:** View of the forceps during bending the Kirschner wire.

bone is not damaged. Also, the forceps does not loosen the wire as the classical methods do, and reduces the risk of symptomatic prominence of the Kirschner wires, skin breakdown and infection.

The main purpose of designing the new bending forceps is to prevent any movements during the bending of the Kirschner wires.

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