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# Performance of Physics Forceps Vs Traditional Forceps: A Review Article

[1]Dr.Gayathri, MDS, [2]Dr.Sathish kumar,MDS, [3]Dr.A.Hinduja, BDS, [4]Dr.Supriya.M,BDS, [5]Dr.Pradeep Christopher,MDS
[1,2]Professor, [3,4]Intern, [5]HOD & Professor,
Department of oral and maxillofacial surgery,
Thai moogambigai dental college and hospital,Chennai

**Abstract:- Non-traumatic dental extraction keeps the bone structure and gingival architecture intact and allows the patient the option of getting dental implants now or in the future.A variety of methods, using physics forceps, have been suggested for removing teeth with the least amount of trauma. Owing to the biomechanical design of physics forceps, a dental implant that is placed straight away has to have the buccal bone plate maintained and the incidence of root fracture decreased. The most recent advancement in dental extraction technology is the Physics Forceps, which offer a quick and painless way to extract teeth. We discovered that the instrument's utility is superior to that of traditional forceps after evaluating all of the aforementioned factors.**

***Keywords:-*** *Physics forceps; conventional forceps; extraction; exodontia; force.*

## I. INTRODUCTION

One of the most frequently performed treatments since the dawn of civilisation is tooth extraction. It is the sole dental surgery that dentists have performed over the years, and different devices have developed over time for it. Guy de Chauliac created the dental pelican in the 14th century, and it was utilised until the late 18th century [1]. The dental key supplanted the pelican, and in the 20th century, tooth extraction forceps took its place. Traditional tooth extraction forceps are a common modern tool featuring two beaks to hold the tooth's crown, a hinge in the middle, and a handle which is a traumatising surgery [2].

The quantity of paradental tissue loss is substantially influenced by the choice of instrument and extraction technique. A rise in interest in non-traumatic tooth extraction to conserve bone for forthcoming implant implantation has also occurred over the previous ten years. The preservation of the marginal alveolar bone ridge is important for obtaining the greatest results from orthodontic, aesthetic, and functional therapy. New tools and extraction methods were developed to gradually relieve stress on the paradental structures[3, 4].Without the squeezing, grabbing, twisting, or pulling forces,we can perform extraction based on lever principlesin physics forceps[5]. Conventional forceps function by exerting equal amounts of pressure on the lingual and facial regions of the tooth before lifting it out of the socket using an arm and wrist action. This pulling force technique can result in root fracture, tissue loss, and bone loss. [6].


Fig. 1: Courtesy. [13]

The following steps were taken in order to complete the extraction:

Fig. 2: courtesy. [13]

- Step 1: The tooth and surrounding structures are lifted after local anaesthetic has been administered to the area.
- Step 2: The beak is positioned in the palatal or lingual side with the handles spread wide to lay it on the firm root surface.
- Step 3: Place the bumper perpendicularly at the mucogingival junction. Keep it in a secure place. There is no need to pull or squeeze the handle.
- Step 4: After coming into position, apply a steady rotational force to the buccal region and hold it there until it encounters resistance. Hyaluronic acid is released as the pressure builds up, helping to loosen the attached periodontal ligaments.
- Step 5: Physics forceps is done when a tooth movement of 1-3 mm is attained
- Step 6: Deliver the tooth using any conventional instrument, like a hemostat or rongeurs. After the tooth is extracted, the socket is checked for any soft tissue damage, granulation tissue, bony edges, or significant bleeding.

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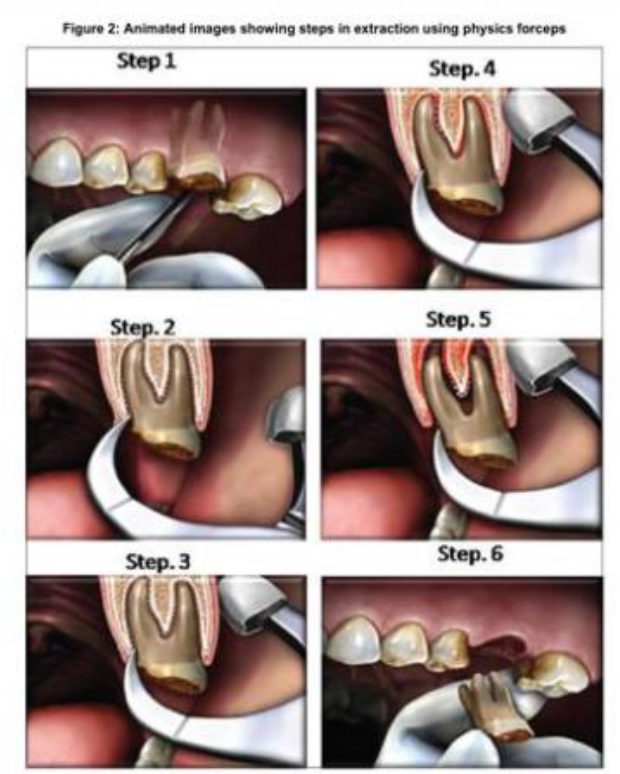


Fig. 3: courtesy. [13]

Following the extraction, all patients received postoperative instructions, antibiotics and analgesics. The major goal was to evaluate the extraction procedure for atraumaticness, instrument handling ease, and intraoperative challenges to reduce patient stress. [6]

## II. DISCUSSION

The Physics Forceps, as the name suggests, are more like dental extractors than forceps since they make use of superior lever mechanics. The "beak" is situated in relation to the palatal or lingual root at the level of the CEJ, while the "bumper" is related to the other handle.The bumper is always placed into the mucogingival junction on the face aspect of the alveolus. This became a basis for the development of the Physics Forceps' biomechanics.

Regular dental forceps are essentially a class 2 lever attached to a hinge, therefore they don't help with the mechanical advantage of extracting the tooth. Instead, they hold or grasp the tooth [5].

Tooth and alveolus do not shatter because the bumper's stress on the soft tissue gingiva and the hard tissue bone is compressed and applied over a larger surface area. Once the tooth is subluxated, it can be extracted using a rongeur or a set of standard forceps [6]. In the current study, there were 4.76 percent root tip fractures seen, all in the conventional forceps group. In comparison to conventional forceps, which had a 90% success rate overall, physics forceps had a 96% success rate.Choi et al. achieved 93% success rates using physics forceps in their investigation [7].

In the modern era of implantology, preservation of marginal bone following tooth extraction is crucial. According to its creator GOLDEN/MISCH, the physics forceps can stop minor bone loss [8].

To access the post operative pain visual analogue scale is used. And the findings are consistent with those Hariharan et al., who discovered that the group using physics forceps experienced less amount of pain than using traditional forceps [9].

By clinically checking for laceration on the marginal gingiva, Mandal S et aldiscovers that the gingival laceration in 16.6% of those who used physics forceps and in 52.38 percent of those who used conventional forceps, and they came to the conclusion that extraction made less traumatizing in physics forceps[10].

Unexpected events such as complications have a tendency to raise the morbidity over what is typically anticipated from a given surgical treatment [11].

Even though they are uncommon, they can cause a lengthy therapy period that is difficult for both the patient and the doctor and leads to minorfracture issues.[12].

## III. CONCLUSION

We come to the conclusion that employing Physics Forceps makes extraction very predictable, painless, and less likely to result in difficulties from healthy to severely decaying teeth. Even though the forceps are more expensive than standard dental forceps, the doctor sees the expenditure as justifiable. We may draw attention to the remarkable lifestyle advantages that patients can enjoy following extractions performed with Physics Forceps, which increases operator comfort and happiness. In the future, there is a good chance that dentists will use Physics Forceps exclusively while doing challenging extractions.

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