

# Comparative Study Between Different Three Techniques of Endoscopic Endonasal Uncinectomy

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## Abstract:

The endoscopic sinus surgery is one of the main surgical procedures in field of rhinology, in addition the endoscopic uncinectomy considers as the gateway for the maxillary sinus opening.

However, there are many techniques to perform uncinectomy in various scientific articles such as Stammberger classical method and Swing -Door strategy which was emerged in 1998 via Professor P.J.Wormld .(1).

This is a simple comparative study to compare between different uncinectomy procedures.

## Introduction:

Endoscopic sinus surgery is a common surgical technique to manage rhinosinusitis which affects 5-15% of population in western countries. (2).

The first surgical procedure in FESS usually is resection of uncinuate process which is by insertion of a special surgical knife or via backbiting forceps.

## Anatomical view:

The uncinuate process (UP) is a small bone of the ethmoid system. it considers as a first lamella in the ethmoid labyrinth.

The lamella of the lateral wall of the nose classified as follows:

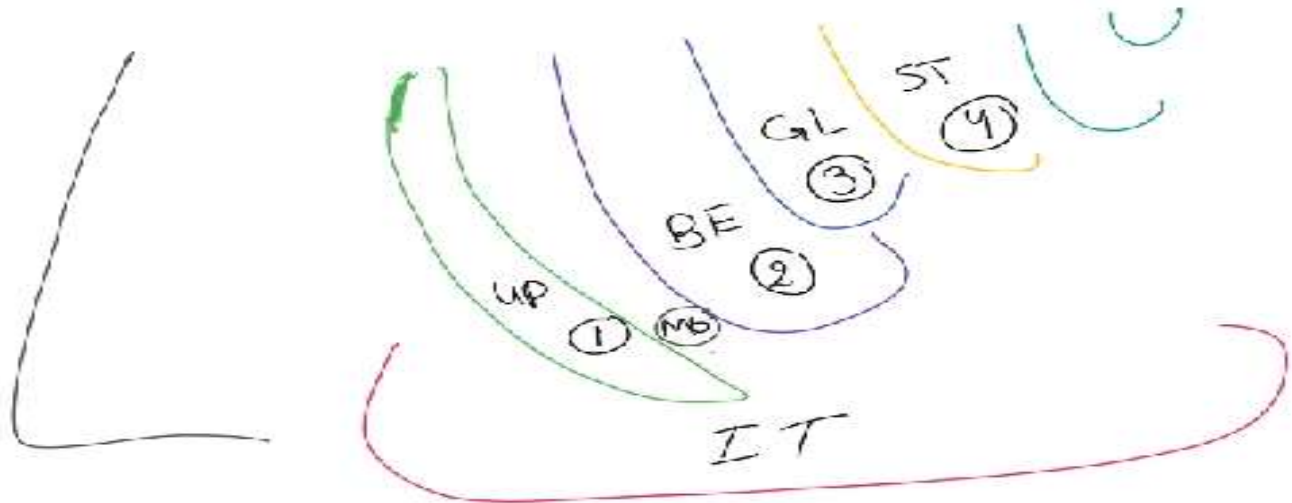
1 – First lamella .... UP.

2 – Second lamella .... Bulla ethmoidalis.

3 – Third lamella .... ground lamella of the MT (middle turbinate).

4 – Fourth lamella .... Superior turbinate. (ST). (3) Figure (1).Figure 1.

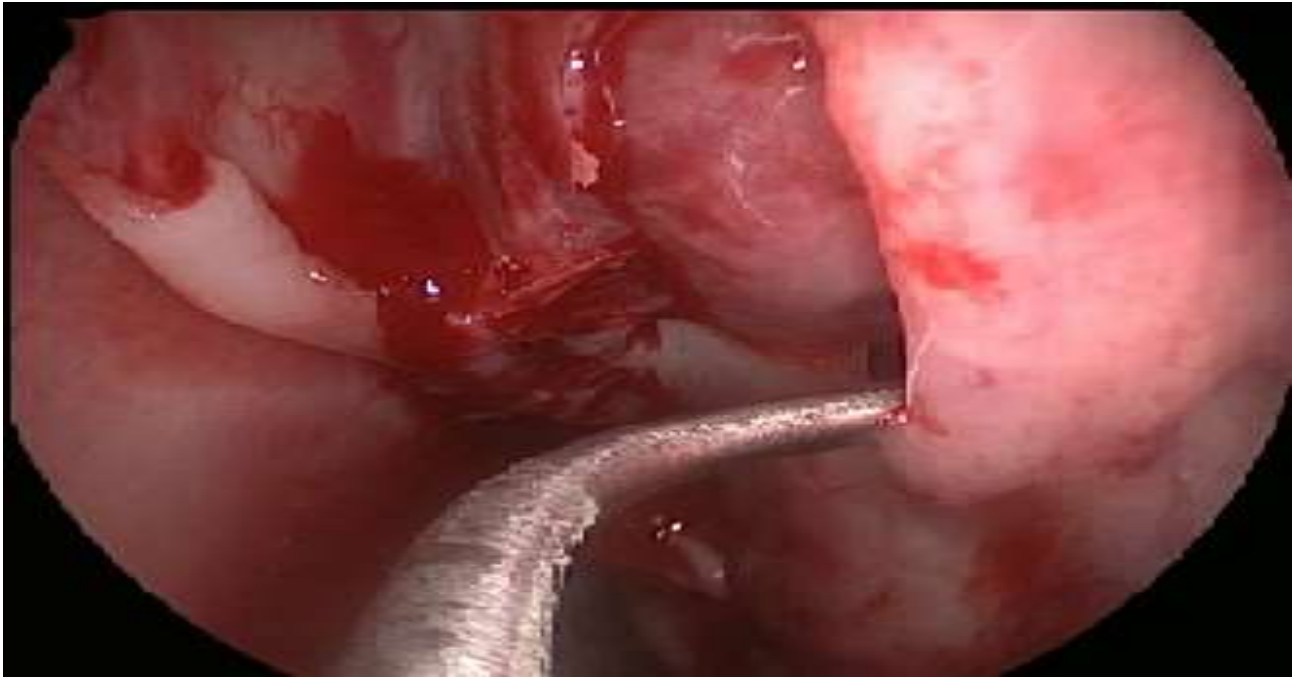
Schematic diagram of the right lateral nasal wall. UP= uncinete process, MO=maxillary ostium, BE =Bulla ethmoidalis, GL= ground lamella, ST = superior turbinate, IT = inferior turbinate.



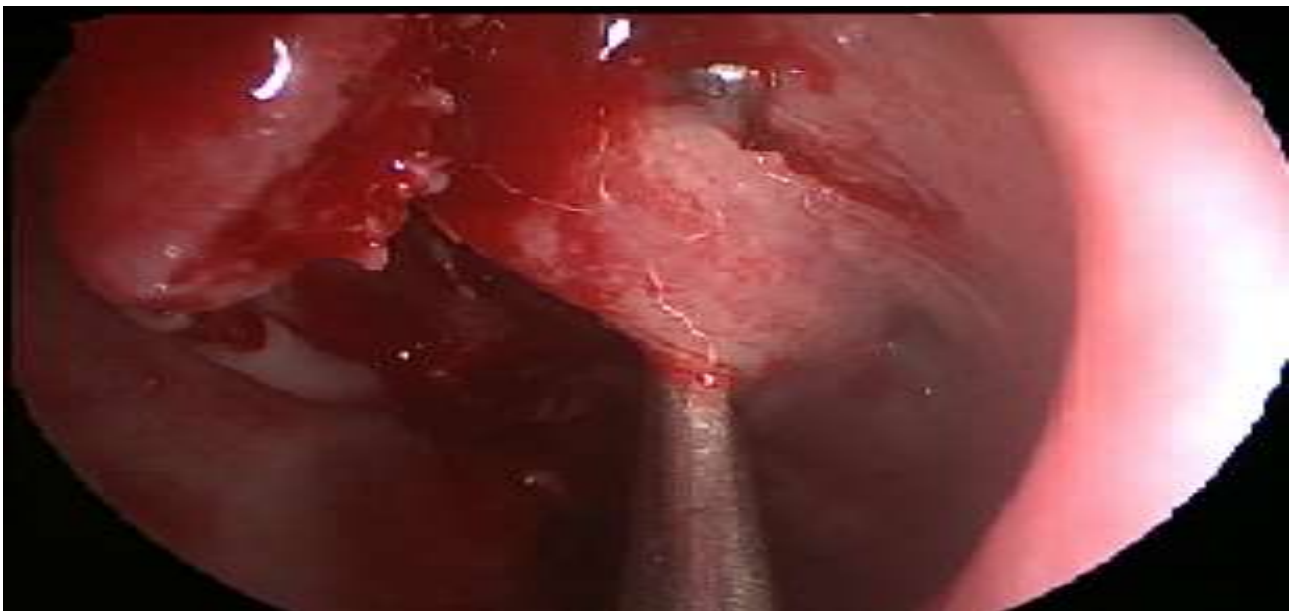
The uncinete process (UP) has three terminations which is either ends in lamina papyracea (the commonest), or to the middle turbinate and skull base. (4) .

The UP surgery starts to expose the maxillary sinus ostium endoscopically , although there are many techniques to do uncinectomy but mainly we discuss the Stammberger technique which is by using a sickle knife to cut the attachment of the uncinete process from the lateral wall of the nose then separate the superior and inferior ends ,generally this procedure has a risk of 2% injury to lamina papyracea , with possible of missing the maxillary natural ostium ,while the other technique via pediatric backbiting forceps (Swing-Door technique)(5) unfortunately this technique can inadvertently leads to nasolacrimal system injury in 2 % of the patients.(6).

The other interesting surgical technique is ‘Rafidain Technique’, this approach depends on the principle that the surgeon can use a special instrument to deal with the UP which has two ends, one end like ball probe while the other end with a sharp knife, both ends can be adjustable easily to take the angle of insertion of the uncinete process with the lateral wall of the nose. (7).as in figure (1) and figure (2).



**Figure.(1)**



**Figure.(2)**

### Patient's and Method:

This is a prospective comparative study which was performed in Al-Basrah Teaching Hospital for 260 patients with rhinosinusitis without nasal polyposis, in this study 100 patients was underwent the Swing-Door technique , 100 patients with Classical Stammberger technique and 60 ( patients with Rafidain 's technique ,and the results as in table (1) :

Techniques	Lamina papyracea injury	NLD injury	Missing of the maxillary ostium	Total complications
Classical stammberger	1(1%)	Nil	3(3%)	4
Swing-Door	Nil	1 ( temporary epiphora) ( 1%)	Nil	1
Rafida in	Nil	Nil	1(1.6%)	1

### Discussion:

According to the table (1), the Classical Stammberger maneuver has 1% risk of lamina papyracea injury with 3% possible missing of the maxillary sinus ostium but without risk to the nasolacrimal system , while in case of Swing -Door technique there is a risk of nasolacrimal injury associated with epiphora in 1% which is either temporary or permanently for this it sometimes needs dacryocystorhinostomy (DCR surgery) as a complication , on the other hand Rafidain's technique has less risk to miss the maxillary ostium without risk to lamina papyracea or nasolacrimal duct.

Ultimately, Rafidain' procedure may be safer because of that the surgeon can observe the tip of his special instrument during the procedure whereas the other two techniques the surgeon mainly depends on feeling of his instruments. (7).

### Conclusion:

We have a lot of endoscopic uncinectomy techniques but we selected the most common performed techniques which are used by many endoscopic sinus surgeons over all the world.

Classical and Swing-door techniques are good tools to deal with but Rafidain's technique is also can be introduced as a new safe and easily performed especially for the beginners.

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