COBLATION TECHNOLOGY FOR ADENOIDS & TONSILS

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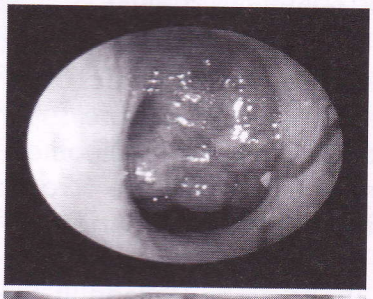
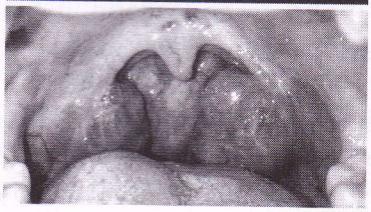
INTRODUCTION :

Adenoids and Tonsils are the first organs of defense of our immune system strategically located in the nasopharynx and oropharynx respectively. They serve the most important function of protecting our body in the early ages from dreadful infections. They are therefore enlarged in their size upto the age of 7 to 9 years after which they slowly regress.

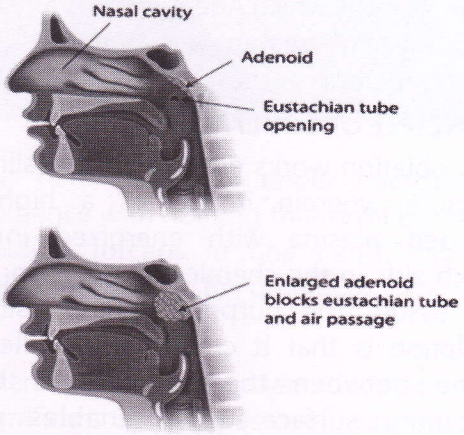


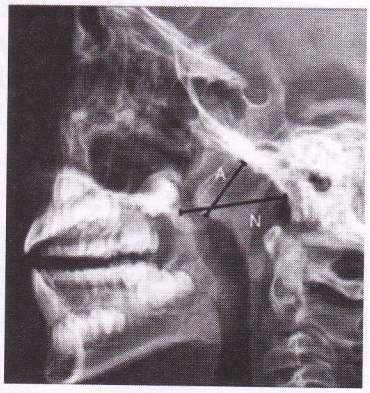


But in few cases they themselves become a source of chronic infection following repeated upper respiratory tract infections and thereby fall into the criteria for surgical removal. Both these organs have a modified grading system according to which the decision for their surgical removal is taken.

Grading scale for Adenoids :

- I - < 25%
- II – 26 – 50%
- III – 51 – 75%
- IV – 76 – 100%





N: nasopharynx, A : adenoids

Modified 5 Grade scale for Tonsils:

- I - < 20%
- II – 21 – 40%
- III – 41- 60%
- IV – 61 – 80%
- V - > 80%

Chronically infected Adenoids (Grade iii & iv) and Tonsils (Grade iii, iv & v) are taken up for surgical removal. Traditionally as earlier, few centres all over the world still perform the cold steel method of

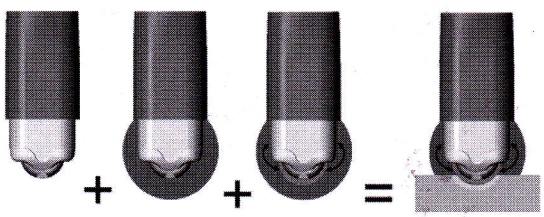
adenoidectomy and tonsillectomy. But its place is been rapidly taken over by the latest Coblation technology.

WHAT IS COBLATION ?

Coblation = Controlled Ablation. Its is a technology by which Adenoids and Tonsils are surgically treated with the help of energized plasma (the 4th state of matter)

PRINCIPLE OF COBLATION :

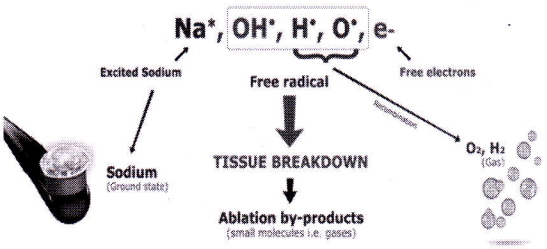
Coblation works entirely in the saline medium wherein it creates a highly charged plasma with energized ions which aids in the chemical dissolution of the tissue. The purpose behind using coblation is that it creates a bloodless plane between the tissue and the adjoining surface which enables its complete removal. Coblation works at a very low temperature of 40-45 degrees by which there is negligible adjacent soft tissue charring and minimal post operative pain.



WAND **SALINE (ELECTRIC PATH)** **VOLTAGE FROM CONTROLLER (CREATES PLASMA)** **COBLATION**

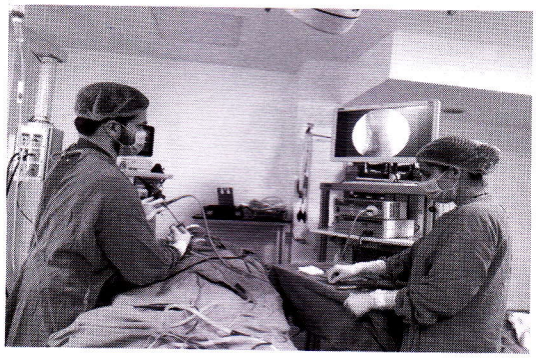
SCIENCE OF COBLATION :

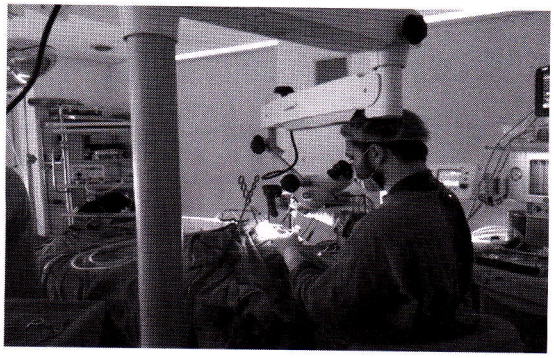
Coblation works by creating a highly energized plasma field by breaking down sodium chloride and water molecule into its free radicals i.e. Na*, OH*,H*,O*,e-. These free radicals are the ones which aid in chemical dissection and dissolution of the tissue. So coblation is a chemical energy and not a thermal energy thereby it creates a low temperature and helps in providing a painless post operative recovery.



ADVANTAGES :

On comparing Coblation with the traditional cold steel methods of performing adenoidectomy and tonsillectomy, it is far more superior in respects of providing a bloodless field. Generally all of the Coblation Adenoidectomies are performed with either a 2.7mm (paediatric) or a 4mm (adult) 0 degree endoscope. It therefore provides a magnified view of the operative procedure and entails complete removal of the adenoid tissue from one eustachian tube to the other. The adenoids are taken out till one reaches the buccopharyngeal fascia of the inferior constrictor muscle. That is the end point of the adenoidectomy which is generally not the case when one is performing the traditional cold steel adenoidectomy where the adenoid tissue is removed by a adenoid curette by a blind palpation of the tissue. There is often torrential bleeding in a case of badly infected adenoids which lengthens the operative time and is accosiated with post operative discomfort which is not the case with endoscopic coblation adenoidectomy.





The surgeon stands on the right side of the patient with a 0 degree scope in the left hand passing into the nasal cavity and the coblation wand in the right hand which passes through the oral cavity.

In view of tonsillectomy, coblation provides the obvious advantage of a microscopic tissue removal with precision. Post operatively the patient has relatively less pain as the fascia over the muscle of the tonsil bed is preserved which is not the case with the traditional method where the muscle fibres are left exposed. Patient returns back to eating normal diet in a day or two as compared to traditional technique where it requires 3 days to return to a normal diet. This is the true advantage of coblation procedure where there is a quick return to normal daily routine and less post operative discomfort. With microscopic vision the entire tonsillar tissue in its entirity is taken out with adequate coagulation of the feeding vessel of the tonsil which is at its inferior pole. Post operative events of secondary hemorrhage are less than 3% and there are few instances where patient needs to be taken back in the OT for any reexploration.

During coblation tonsillectomy the surgeon is seated at the head end of the patient like the traditional technique but here he works under microscopic guidance with holding the tonsil by tissue holding forceps in one hand and the coblation wand in the other.

Overall Coblation adenoidectomy has significant advantages over conventional adenoidectomy in terms of reduced blood loss, no post operative residual tissue and lower pain grade on day 1 after surgery.

Coblation tonsillectomy has significantly reduced the operation time, intraoperative blood loss and postoperative pain and is associated with early recovery of dietary routine.There is significant difference in postoperative morbidity and complications between patients undergoing coblation tonsillectomy and those undergoing traditional technique.

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Dr. Smeet Vadher

M.B.B.S., DNB (ENT)

FELLOW NASAL ENDOSCOPY & SKULL BASE SURGERY

Time : 9.00 a.m. to 11.00 a.m. & 7.00 p.m. to 9.00 p.m.

Dr. Dinesh Vadher

M.S. (ENT), D.O.R.L.

Time : 11.00 a.m. to 1.00 a.m. & 5.00 p.m. to 7.00 p.m.

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