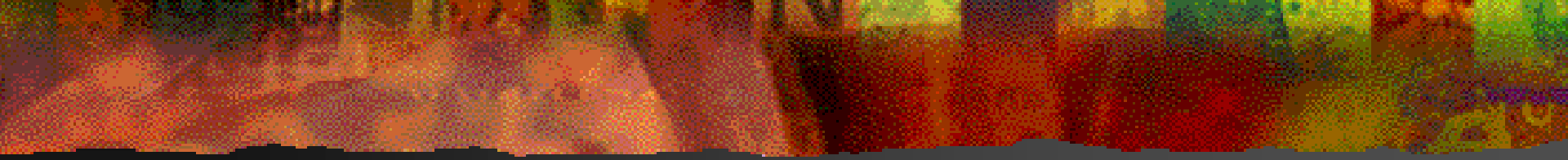


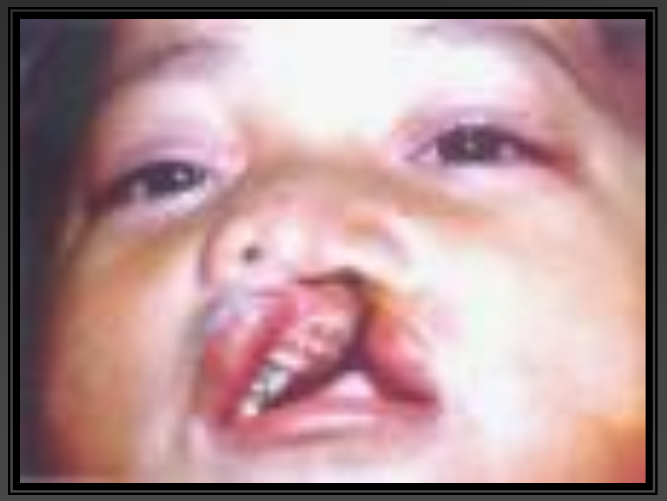
CLEFT LIP AND PALATE

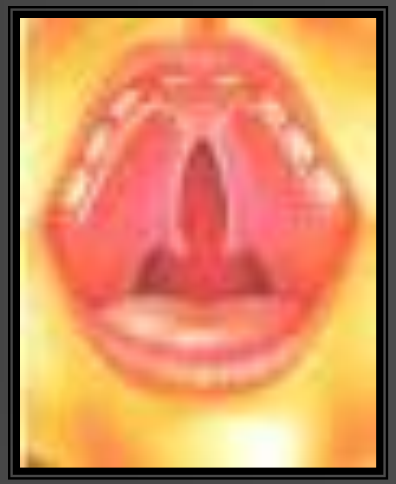
Dr. Falguni Mehta

CLEFT LIP AND PALATE

CLEFT PALATE

Cleft palate is the opening of the roof of the mouth





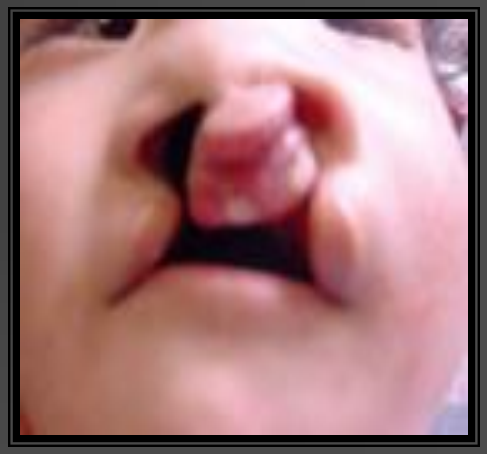
classification

1. Unilateral
2. Bi lateral
3. Median

CLEFT LIP AND PALATE

UNILATERAL

BILATERAL

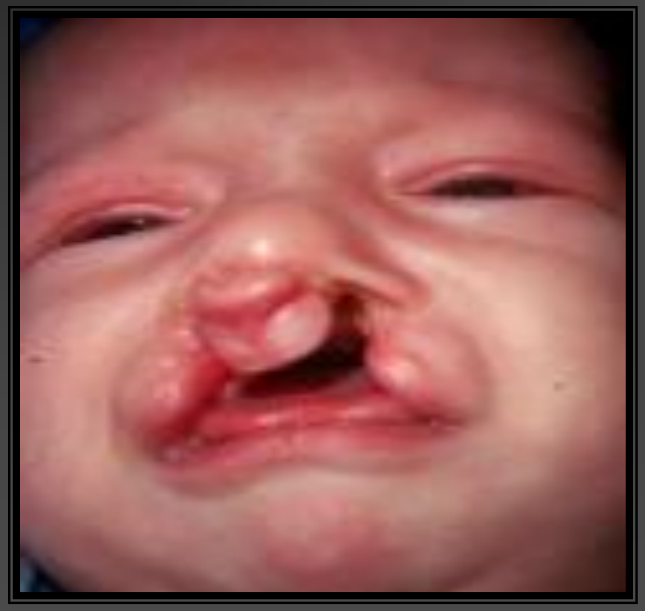


CLEFT LIP AND PALATE

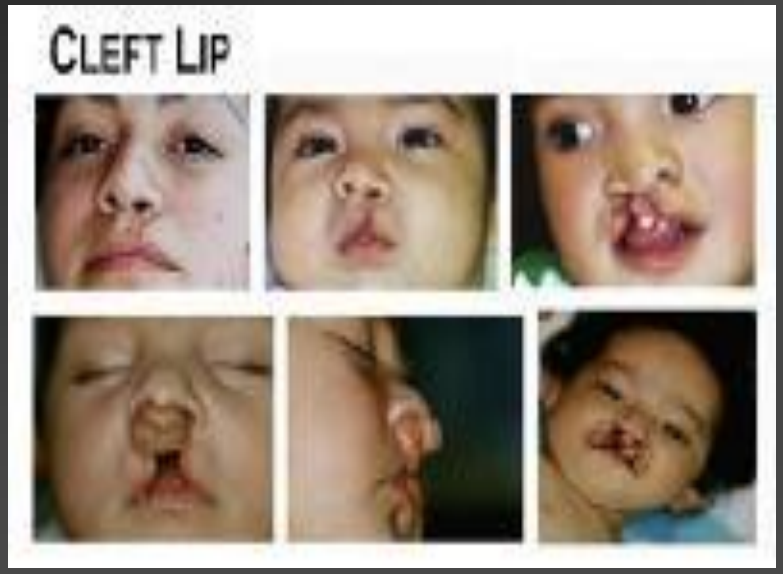
BILATERAL CLEFTS

CLEFT LIP AND PALATE

Bi lateral cleft involving palate



CLEFT LIP AND PALATE



When Do Oral-Facial Clefts Develop, and How Common are They?

These separations normally are present in early fetal development. The lip usually closes by 5 to 6 weeks after conception, and the palate by 10 weeks. The lip or the lip and palate together fail to close in approximately 1 in every 1,000 babies born. Cleft lip/palate occurs more often among Asians (about 1.7 per 1,000 births) and among certain groups of American Indians (more than 3.6 per 1,000 births). It occurs less frequently among African-Americans (approximately 1 per 2,500 births). Males are affected more frequently than females.

Cleft palate occurs alone less often, appearing in approximately 1 in 2,000 babies. Unlike the risk for cleft lip/palate, the risk for isolated cleft palate appears to be similar across all racial groups. Another difference from cleft lip/palate is that females are affected more often than males.

What Causes Cleft Lip/Palate?

The causes of cleft lip / palate are not well understood. Studies suggest that a number of genes, as well as environmental factors, such as drugs (including several different antiseizure drugs), infections, maternal illnesses, maternal smoking and alcohol use and, possibly, deficiency of the B vitamin folic acid may be involved.

Cleft lip/palate may occur alone or with other abnormalities that may be hidden or obvious. Up to 13 percent of babies with cleft lip/palate have other birth defects. Some cases involve genetic syndromes which may pose specific problems for the baby, and may have a high risk of affecting others in the family. For this reason, babies with cleft lip/palate should be thoroughly examined by a doctor soon after birth.

Problems associated with clefts:

1. Dental
2. Esthetic
3. Speech
4. Hearing
5. Psychologic

What Special Problems are Associated with Oral-Facial Clefts?

There may be problems with feeding, ear disease and speech development, as well as dental problems. They may differ between children with cleft lip/palate versus those with isolated cleft palate; the problems also will differ depending upon the specific cleft and its severity. Each child with cleft lip/palate or isolated cleft palate requires an individualized treatment plan.

Children with oral-facial clefts usually are treated by a team of specialists so that all aspects of treatment can be coordinated. Most teams include a pediatrician, a plastic surgeon, dental specialists, an otolaryngologist (ear, nose and throat specialist), a speech-language pathologist, an audiologist (hearing specialist), a geneticist, a psychologist and social worker.

Whom to consult ?

Cleft lip and palate patients are managed by a team of doctors. This team includes:

1. Plastic surgeon
2. E.N.T
3. Oral and maxillo facial surgeon
4. Orthodontist
5. Prosthodontist
6. Speech and language therapist
7. Psychologist
8. Physician

When to consult a doctor ?

--------Immediately after birth

Treatment can be done in different stages.

3-4 months --- Lip closure surgery.
6-12 months --- Palate repair
School age --- Cosmetic surgery
Teen age --- Rhinoplasty
10 years --- Orthodontic treatment
18 Years --- Final cosmetic surgery

What About Feeding?

Babies with cleft lip usually do not have much trouble feeding, although those with cleft lip accompanied by cleft palate as well as those with isolated cleft palate sometimes do. A cleft in the roof of the mouth makes it difficult for the baby to suck forcefully enough to draw milk through a nipple. Some babies also have problems with gagging, choking, or milk coming out through the nose while feeding. To make feeding easier, some doctors recommend using a small plastic plate called an obturator that fits into the roof of the mouth and blocks the opening while feeding.

It is possible to breastfeed some infants with cleft palate, although this requires extra patience and modification of techniques. Breastfeeding is more likely to be successful in babies with less severe clefts.

Most cleft palate teams pay close attention to feeding and help parents establish good feeding practices right after the child is born in order to keep problems to a minimum.

FEEDING

Feeding Issues

The first thing to note is that many children with clefts feed without difficulty and problems will not automatically arise because of a cleft.

The Difficulties

That said, a baby with a cleft palate is more likely to have a feeding difficulty because, without a properly functioning palate, your baby will find it difficult to gain and maintain suction of the mouth. Your baby may tire more quickly from the effort of trying to maintain suction. Your baby may also experience problems of liquid coming down the nose.

Following palatal repair, your baby may again experience feeding difficulties. Feeding patterns pre- and post-operative should be checked with the hospital where surgery is due to take place.

Don't despair – seek help

It is important to remember that aside from the mechanical difficulty of the cleft your child is like any other baby and, given some help and direction, you can develop a workable feeding pattern. If your child is having difficulty it is important to acknowledge that the fault lies with the cleft, not with your child or with you.

If your baby is having problems you should get in touch with a speech and language therapist. It is not widely known, including

FEEDING

among medical personnel, that speech and language therapists can help with feeding. However, not all speech and language therapists will be experienced in helping with feeding difficulties but they will always be able to refer you to a therapist who specializes in children with cleft lip and palate.

If you are having difficulty being referred to a speech and language therapist you should contact the Cleft Lip and Palate Association of Ireland (e-mail: info@cleft.ie) where you will be put in touch with someone who can help.

Feeding your baby is not only a matter of giving him/her sufficient nourishment. In usual circumstances feeding is a relaxed enjoyable time for parent and baby. If you find that feeding is stressed and frustrating, try to remember that help is at hand if you seek it out.

Breast-Feeding

If you have decided prior to the birth of your baby to breast feed, you should attempt to do so. Breast feeding is an option for both babies with a cleft lip only and babies with a cleft of the soft palate. The absence of the separation between the nose and the mouth which a palate gives makes it difficult for a baby with a palatal cleft to successfully breast feed. Success depends on your baby making a seal with his or her lips and being able to

FEEDING

suck properly while not swallowing too much air in the process.

If breast feeding proves unsuccessful for you, you may wish to try bottle feeding with expressed milk. This can be facilitated by the use of a breast pump which nursing staff can help you with initially. The time required to breast feed may also be a determining factor for you as breast feeding can be time consuming, more so for a baby with poor suction, as can the process of expressing milk.

Don't be disappointed if breast feeding is not successful for you. It does not point to failure on your part and will not affect your bonding with your baby.

Bottle Feeding

Bottle feeding can be made easier merely by using a normal teat with an enlarged hole. This will allow the milk to flow more freely. Special teats are available and may be recommended if your baby is having difficulty with a standard teat.

Positioning your baby differently may also help with feeding. You may find that using a more upright position prevents fluids coming down the nose. Whatever the position, it should be comfortable for both you and your baby. Referral to a dietitian is recommended for advice on dietary requirements.

Every baby is different, and you may have to try a number of different methods before you find one that suits you and your baby. Do seek the advice of a speech and language therapist if you experience difficulty, and the Cleft Lip and Palate Association can lend support and direct you further if you so desire.

How Is Speech Affected by Clefts?

Children with cleft lip generally have normal or near-normal speech. Some children with cleft palate (isolated or as part of cleft lip/palate) may develop speech a little more slowly than other children. Their words may sound nasal and they may have difficulty producing some consonant sounds. However, after cleft palate repair, most children eventually catch up and develop normal speech, although some will require speech therapy or additional surgery.

SPEECH

Speech Development

While speech difficulties are associated with cleft palate, it is important to realize that not every child with a cleft palate will experience such difficulties. However, because of the nature of the problem, your child is more at risk of having a speech and/or language problem, and both you and the professionals will need to keep a close eye on your child's speech development. Most problems can, however, be resolved with speech and language therapy. Children with cleft lip only rarely have any speech difficulty associated with the cleft.

The nature of speech difficulties

Speech and/or language problems in children with cleft palate are usually associated with

A. deficits in hearing
B. wrong patterns of tongue movement
C. problems of palate function, or
D. a combination of these factors

The resulting problems are ones of language development, articulation and nasality.

Children with a cleft palate tend to use the back of their tongue too much, resulting in many sound being made far back in the mouth. With a cleft palate the normal closing action of the soft palate does not take place, resulting in air escaping into the nasal passages causing nasal sounding speech.

SPEECH

The Speech and Language Therapist

First contact with a speech and language therapist should be as early as 6 months of age if your child is experiencing feeding difficulties. You may even find that contact with the speech and language therapist begins earlier than this, as this seems the practice favoured by cleft teams in their overall care approach. The therapist can learn much at the early stages from listening to your child's babbling pattern and observing his/her interaction with you. The therapist can also advise you on important aspects of speech and language development, and once in the system regular reviews can occur to ensure everything is developing along normal lines.

HEARING

Hearing Issues

Your child may experience some hearing impairment as a result of being born with a cleft palate. This does not always happen, but the possibility exists and your child's hearing should be checked at approximately 12 months of age. Poor hearing can adversely effect the development of your child's speech. This is because a child can only imitate the sound it hears. Consequently you must be aware of this possibility so that your child is not deprived of full learning ability in his/her early years. If your child has a cleft lip only, hearing problems will not arise consequent on the cleft.

What can go wrong?

Problems arise due to the connection between the muscles of the eustachian tube and the soft palate at the back of the mouth. During surgery to repair the palate, some of the muscles connected with the eustachian tube are divided and used in the palate repair. Consequently the Eustachian tube may not work properly and air will not get into the middle ear as readily as it should and its place is taken by fluid. This fluid interferes with the conduction of sound through the middle ear and your child may become 'hard of hearing'. The problem most commonly arises in your child's earlier years when the Eustachian tube has a more horizontal position. The tube becomes more sloped by the age of 6 or 7 years as the shape of your child's face changes with the result that the problem tends to decrease.

The signs of hearing loss

Hearing loss can be difficult to detect in the very young child. Unresponsiveness, frustration or withdrawal can all be symptomatic of ear infection resulting in poor hearing. Turning up the sound of the television or having to repeat yourself can be other clues as to the existence of a problem. Particular attention should be paid to your child's hearing in the first 2-3 years of life. Hearing tests will be carried out as part of the work of the combined cleft team, and you should not hesitate to contact the team and relay any concerns you may have with regards to your child's hearing.

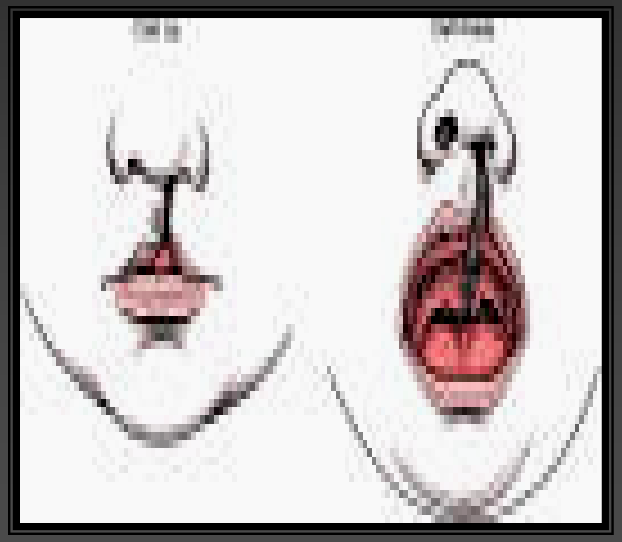
Treatment

Treatment involves day case surgery, the administration of a general anaesthetic, and the draining of fluid with the insertion of a grommet. The grommet may last 6-9 months after which point they usually expel naturally. Grommets may need insertion on more than one occasion until such time as your child's Eustachian tubes start to work properly.

You should generally notice an improvement in your child's hearing within a few days. Swimming is now generally allowed for children with grommets in place if certain precautions are taken. Your ENT surgeon will advise you accordingly.

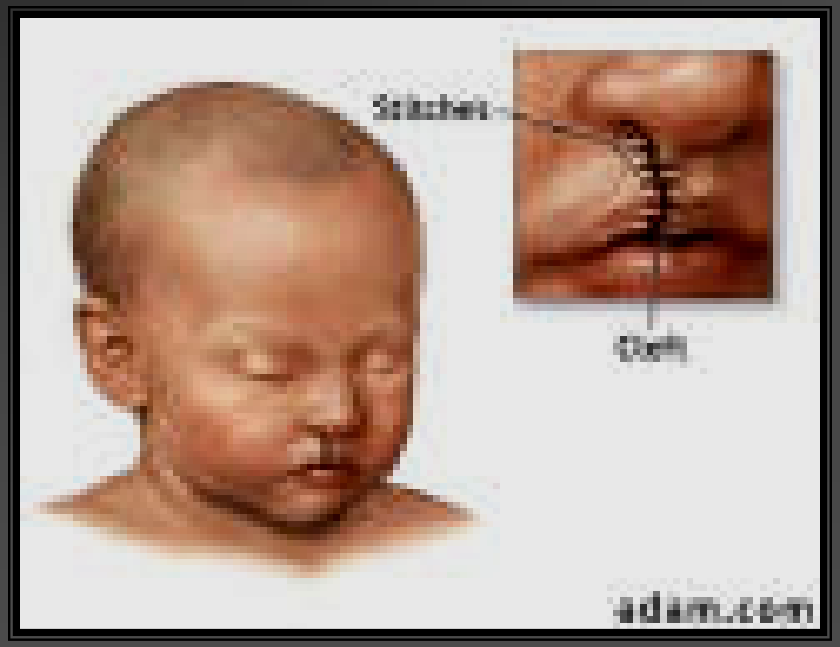
Treatment :

LIP CLOSURE PROCEDURE



CLEFT LIP AND PALATE

Surgical procedure for repair of Cleft palate.



CLEFT LIP AND PALATE

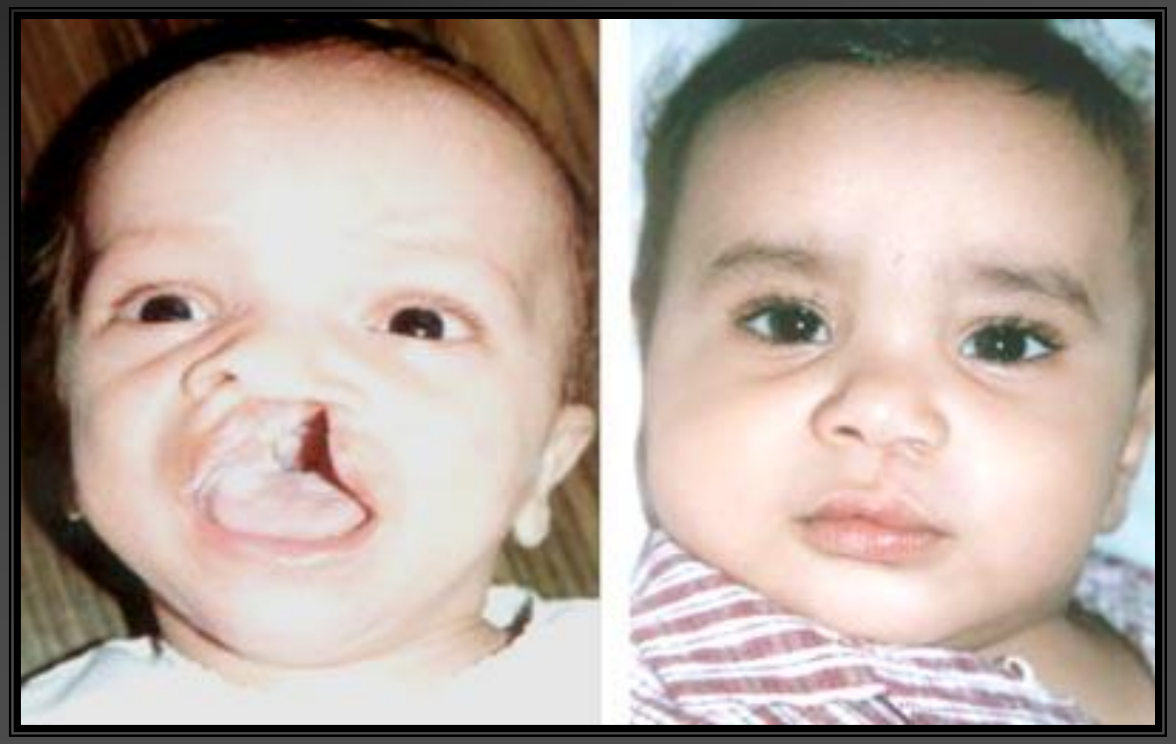
Surgical procedure for repair of Cleft palate.

Treatment

LIP CLOSURE PROCEDURE

CLEFT LIP AND PALATE

Correction of cleft lip and palate



ORTHODONTIC TREATMENT

Orthodontics

The greatest of attention should be taken of all children's teeth but this is especially important in the case of a cleft lip and palate child. It is the role of the orthodontist on the cleft team responsible for your child to monitor the growth and assist the development of his/her teeth. The first teeth and later the permanent teeth are very important for the success of the orthodontist's work.

The aim of orthodontic treatment is, where possible, to align all the teeth and close all residual spaces without the use of bridges or dentures.

The Process

6-7 years
Dental records from which later treatment of your child is planned are created from about 2½ years. X-rays, impressions and photographs may be taken at this stage. The first full orthodontic assessment occurs at around 6½ to 7 years. Any supernumerary teeth which interfere with the proper development or eruption of second teeth are removed at this stage by a maxillo-facial surgeon. For some children simple orthodontic treatment involving braces to straighten the teeth can now begin and no further treatment may be necessary.

ORTHODONTIC TREATMENT

9-13 years

In most cases, however, expansion of the maxilla and bone grafting of the alveolus (tooth bearing portion of the upper jaw) is necessary, with the expansion beginning at about 9 to 10 years of age. The purpose of the expansion is to bring the child's teeth into correct relationship to each other. When this has been deemed successful, the maxillo-facial surgeon then places a bone graft (from the top of the hip bone) to replace the missing bony tissue. The expanded position of the dental arch is maintained for 6 to 12 months by which time the graft should have taken successfully. The procedure should be completed by the age of 10 to 11 years. Full orthodontic alignment can start with the use of fixed braces when all the permanent teeth have erupted (usually by the age of 13 years).

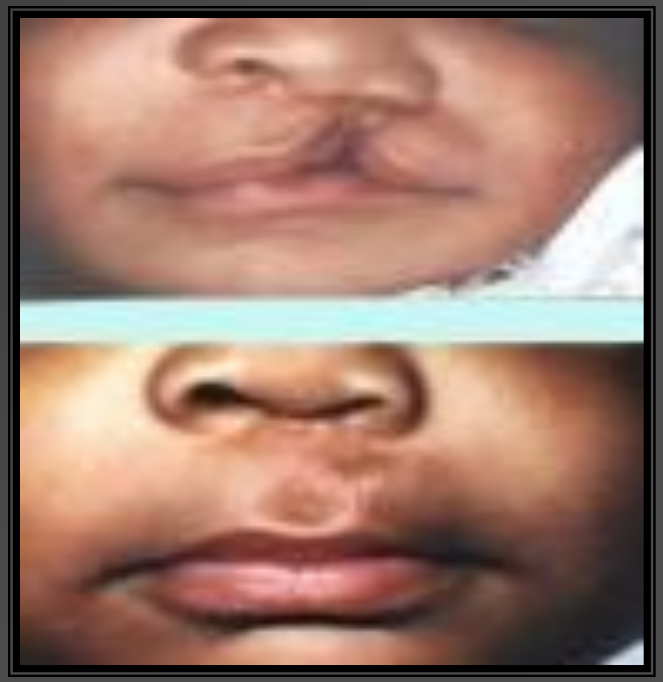
18 years

In a significant number of cases an osteotomy to correct a misalignment of the dental arches is necessary and this surgery is carried out at about 18 years of age. In the majority of cases this surgery gives very good results.

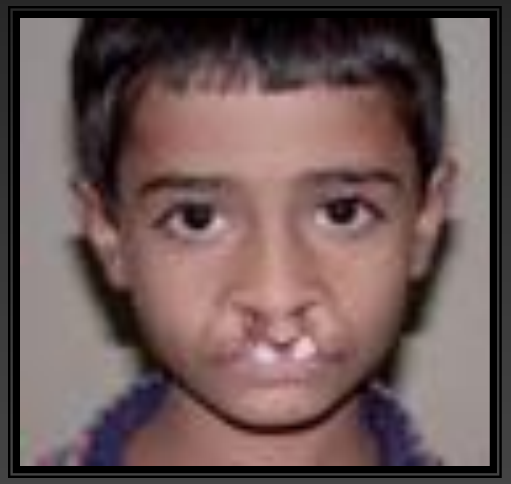
Orthodontic treatment prior to lip repair is rarely required but may be used where the premaxilla is extremely prominent and lip repair is difficult.

CLEFT LIP AND PALATE

Surgical procedure for cleft patients



CLEFT LIP AND PALATE



Before surgery

After surgery

Treatment progression

Can Oral-Facial Clefts Be Prevented?

While little is known about how to prevent oral-facial clefts, studies suggest that taking multivitamins containing folic acid before conception and during the first two months of pregnancy may help prevent cleft lip/palate and isolated cleft palate.

Other studies have shown that fetuses with certain predisposing genes may be at increased risk for isolated cleft palate if their mothers smoke.

Similarly, one study found that fetuses with a predisposing gene may be at increased risk of cleft lip/palate if their mothers drink during pregnancy. Women who are planning pregnancy or who are pregnant should avoid alcohol, which also can cause a number of mental and physical birth defects. Because some types of medications (such as some drugs used to treat epilepsy) have been linked to increased risk of cleft lip/palate, women who take medications for chronic illnesses should check with their doctors before they become pregnant. (They should not, however, discontinue their medication without discussion with their physician.) In some cases, the doctor may recommend stopping the medication or switching to a medication that is safer during pregnancy. All pregnant women should use only medications prescribed by a physician who knows of the pregnancy, and get early and regular prenatal care, beginning with a pre-pregnancy visit. Families with a history of cleft lip/palate, isolated cleft palate, or any other condition of which clefting is a part, may wish to discuss the chances of recurrence with a genetic counselor.