**Periodontics**

**Lec.3**

**Effects & sequelae of the incorrect use of mechanical plaque**

**removal devices:**

Tooth brushing can cause damage both to soft & hard tissues.   
Trauma to the soft tissues results in gingival erosion & gingival   
recession. Trauma to hard tissues leads to cervical abrasion of   
the tooth surface which is mainly caused by the abrasives in the   
dentifrice. These lesions have been associated with toothbrush   
stiffness, the method of brushing, brushing frequency/time,   
excessive brushing force, and improper use of both manual and   
powered tooth brushing.

The use of dental floss, interproximal brushes & wood sticks   
may also induce soft tissue damage; however, in most cases   
this damage is limited to acute lesions, such as lacerations and   
gingival erosions.

**Scaling & Root Planing (S + RP):**

**Scaling** is the process by which plaque &calculus are removed   
from both supragingival & subgingival tooth surfaces.

**Root planing** is the process by which residual embedded   
calculus and softened cementum are removed from the roots   
to produce smooth, hard & clean root surfaces.

The supragingival scaling is the initial phase of debridement of the dentition in patient with periodontal disease in order to facilitate the   
subsequent subgingival scaling, so supragingival   
calculus and gross overhang or metal crown should be   
removed first, then the dentition are polished so that   
the patient can start self performed plaque control   
program.   
Subgingival S&RP, although they are considered as two   
separated procedures with different objectives but in   
clinical work they always carried out together and can   
be carried out in sessions, the number of teeth included   
in each session for RP depends on the skills of the operator   
and the severity of the case, usually (4-6)teeth.At the   
beginning the area is probed to identify:

1. The probing pocket depth ( PPD).
2. Anatomy of the root surface.
3. Location of the deposits.

Scaling & root planing **aims** to:

* Restore gingival health by the removal of bacterial plaque   
  (which is responsible for periodontal tissue destruction),   
  calculus & the superficial layer of cementum however,   
  calculus & plaque grow in surface irregularities of   
  cementum furthermore, bacterial products (such as   
  endotoxin) penetrate into the cementum surface.
* The creation of a clean & hard root surface that is as smooth   
  as possible (which inhibits further plaque retention) must be   
  achieved to promote tissue healing possibly with the   
  formation of a long junctional epithelium and aids soft tissue

reattachment.

Subgingival scaling & root planing are performed as either   
closed or open procedures under local anesthesia. The **closed**   
procedure implies subgingival instrumentation without   
displacement of the gingiva, thus less trauma, pain, bleeding   
and minimal recession (which is important for esthetics,   
especially anteriorly) were achieved. In addition, wound healing   
occurs more rapidly following closed procedures. Closed   
therapy is the definitive treatment for mild & moderate   
periodontitis and represents the initial therapeutic approach   
prior to surgical intervention for complex & severe cases.   
Closed therapy limitations include its performance without   
direct vision & good access for the instruments, thus its success   
is dependent on tactile sensation & knowledge of root   
morphology. Even the experienced hygienist will not always   
effectively treat all root surfaces, nor completely remove all

plaque & calculus from all surfaces, e.g. S+RP of poorly   
accessible, irregular root surfaces, in deep, narrow or distal   
pocket and substantial furcation involvement, even in patients   
with minimal mouth opening capacity & with expansively   
progressive disease.

**Open** procedure calls for exposure of the affected root   
surface by the displacement of the gingival tissue, thus gingiva   
is incised and reflected to facilitate access for the instrument   
and visibility for the operator.

Instruments used for scaling & root planing are classified as

* Hand instruments.
* Ultrasonic & sonic instruments.
* Motor driven devices incorporating diamond-coated tips   
  (reciprocating instruments).
* Rotating instruments.
* Laser instruments.

**Reciprocating instruments:** a special designed hand piece will give 20000-30000 strokes per min. with a 1.2mm reciprocating motion of a specially designed working tips for   
S & RP (e.g. a set of PER-IO-TOR instruments), its use is less time consuming than hand instrument , results in less root surface loss and produce equivalent clinical outcome compared to hand, sonic or ultrasonic scalers.

**Rotating instruments**: used to debride root furrows, furcation areas and root surface in deep narrow pockets because in these situations   
cannot be properly debride with hand inst. A fine grained diamond bur is usually used with great care to avoid excessive removal of tooth substances.

**Laser**: recently laser devices been introduced to   
be used in different aspects of periodontal   
therapy including S&RP.

**Removal of Plaque retentive factors**

Epidemiological studies had document the relation   
between faulty dentistry (overhang filling, defective crown margin & improperly situated clasp of P.D.) and periodontal disease   
due to its plaque retentive property .Such conditions should be corrected either by correction or replacement of the prostheses &   
restorations to prevent accumulation of plaque & facilitate self-performed tooth cleaning to maintain good periodontal health. overhang restorations can be removed using diamond stone   
mounted on a hand piece

**Evaluation of the effect of the initial, cause-related therapy**:

Reevaluation of the patients periodontal conditions & caries   
activity should be performed no earlier than 6-8 weeks   
following the last session of the S+ RP procedures, in order to   
provide time for the tissues to heal by the formation of a long   
junctional epithelium & sufficient practice with oral hygiene   
skills. The initial phase of the therapy is completed with a   
thorough analysis of the results obtained with respect to

1. Improvement of the self-performed plaque control.
2. Reduction in plaque level (plaque index).
3. Resolution of gingival inflammation include less bleeding,   
   redness & swelling ( gingival index and bleeding on probing).
4. Shrinkage of the gingival soft tissue (recession).
5. Increased resistance to probe tip penetration by the tissues   
   at the base of the pocket
6. Reduction of probing pocket depth, and if possible   
   changes in probing attachment level as a result of   
   gingival shrinkage and formation of long junctional epi.

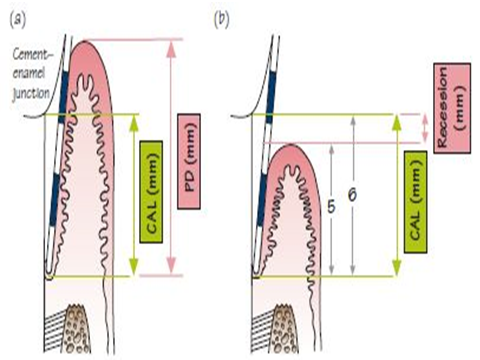
Clinical attachment level (CAL): is the distance from the cementoenamel junction (CEJ) to the location of inserted periodontal probe tip(bottom of gingival crevice or periodontal pocket).

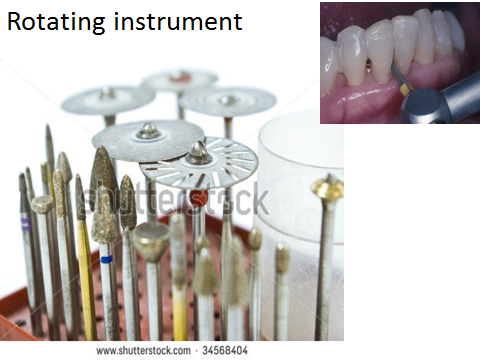
1. reduced tooth mobility.

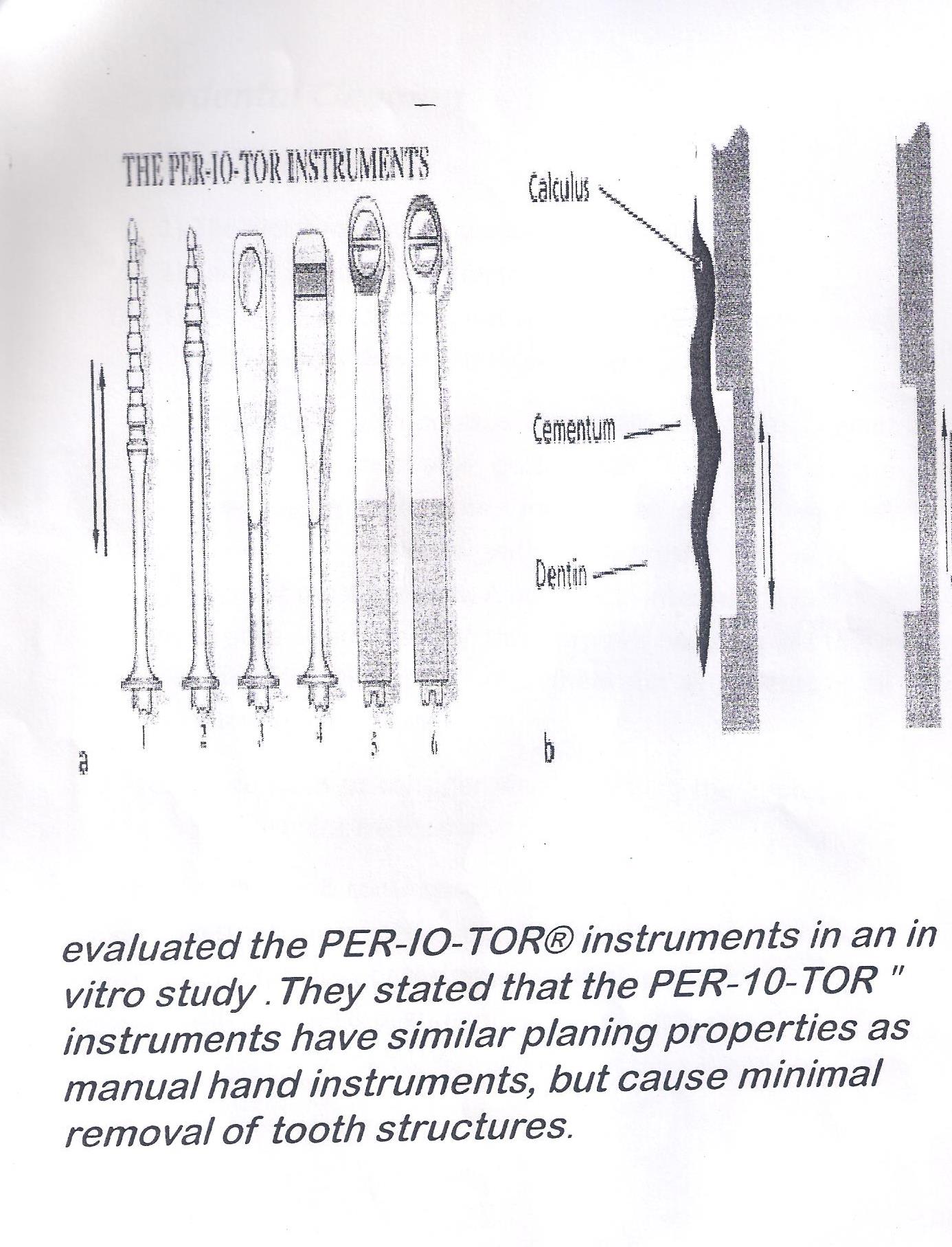
The Pockets should not be probed sooner than 4-6 weeks   
after S&RP as this may interfere with healing process.

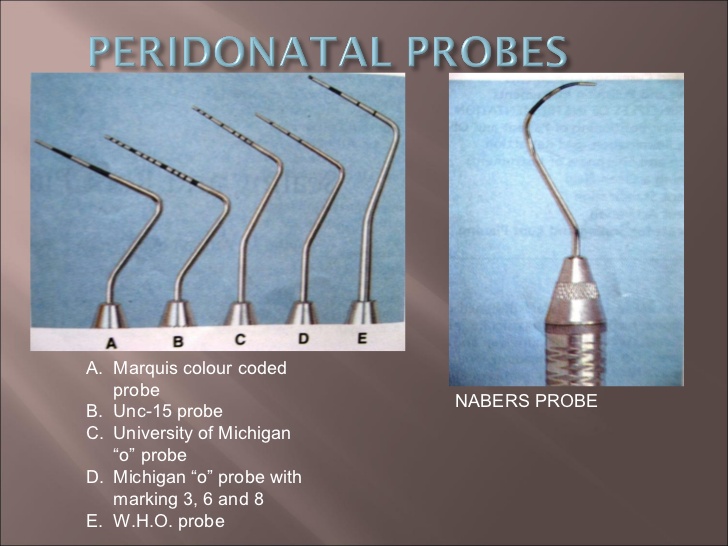
When we evaluate the results of our treatment   
according to these points we can see one of the   
following conditions :-

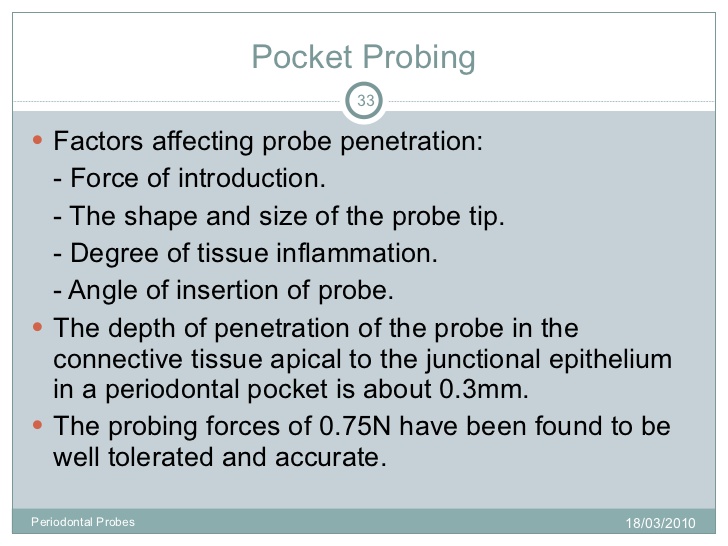
1. Patient with improved oral hygiene, no gingival   
   inflammation, no bleeding on probing with marked   
   reduction in probing pocket depth, in such situation no   
   further periodontal treatment is required and the   
   patient directly advanced to maintenance phase of   
   periodontal therapy.
2. Patient with proper standard of oral hygiene but having   
   some sites of bleeding on probing with no significant   
   reduction in probing depth. Such patient may need to be   
   advanced to corrective phase including the periodontal   
   surgery.
3. Patient with inadequate oral hygiene due to lack of   
   motivation or lack of ability to do proper home care, such   
   patient should be remotivated and reinstructed to   
   improve their oral hygiene because if the oral hygiene   
   not improved the periodontal disease will recurrent even   
   if we conduct periodontal surgery.

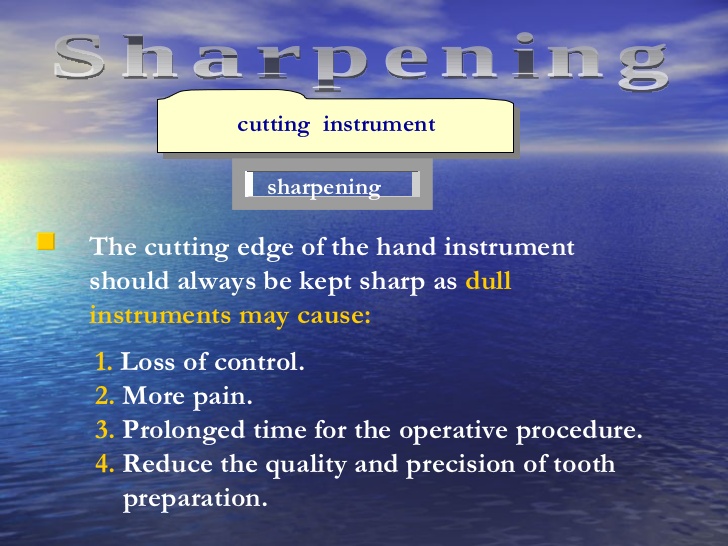










Kit includes sharpening stone,lubricating oil,test stick and honing rod