

Partial translation

PERFECTING - PERFECTING - PERFECTING - PERFECTING
teeth - mouth - maxillary

Commentaries on the new HEXOCALEXIQUE therapy and endodontic infection
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We can truly speak once more of a new revolution in the treatment of root-canal infections, when we examine the latest technique of Doctor Pierre D. Bernard, who by the application of the newly discovered "heavy" oxide of calcium for this treatment, has created this revolution. (1)

THE PRECEDENTS :

The "ocalexique" principle, already introduced under a number of different trade names, represents a revolution, as did in its time the ionophoresis. (2)

A revolution because, contrary to the classic process which mummified the ineradicable organic debris of the delta apical and the dental tubuli, we dispense with it as they do in hygiene by destroying by lime cadaveric materials, and other putrefied organic waste forming the basic ground of infection.

Revolution in our methods of operational techniques because :

- 1) - It is not necessary any more, (and must even be avoided) to penetrate with our dental instruments right up to the apex.
- 2) - The canals must be dried by the use of a simple gauze wick or a small sponge or dry absorbent cotton, and not by conventional methods. Above all, never use hot air, for this dries up the wall of the canal base.
- 3) - The use of all compressive filling material is also prohibited.

Revolution in its capacities :

We can now conclude with Mugnier and his colleagues, " on the effectiveness of this method in the large majority of cases which appeared difficult or impossible to treat by other methods". (3)

Revolution in the results, since :

We now have a superactivity in the basic metabolism, according to Dr. Bernard, (4) which permits a much more rapid regeneration, similar to that which has been established by Sebban and Breillat (5) " this enlightening knowledge on the apical has been observed in seven weeks and not, as in the past, months and even years ". Madame Maringe-Chastang (6) also adds when she mentions the study of temporary infected teeth, " between thirty and ninety days, we observed a rapid bony regeneration of the periapex and this without radi-
cular reabsorption, when for example, we observed this after the use of cortocoids ".

The studies on the ocalex have been conducted with the same exactness as those on the ionophoresis, and we can transfer to his new domain the comments of Marmasse on the ionophoresis where he writes : (7)

Bernard then scored because of this knowledge and a criticism of the electrical phenomenon of the transport of ions, which he presented as being indisputable (as he does today in his studies of physical proprieties, chemistry, biological, and metabolics of the ocalex) and finally because he has placed in the hands of French practitioners, a practical instrument, an oxycalcique product, up to this moment unknown to chemists, but identified by Hamel. (8)

MINOR INCONVENIENCES :

It becomes evident however that all is not yet perfect nor complete, as Bernard writes in the epilogue of his monograph on "Ocalexique Therapy", (9)

Because with the classic light oxide of calcium, the expansive power was very variable, depending on the geological origin of the carbonate of calcium used to form the oxide of calcium. In other respects it was necessary to curb the hydration reaction, (it is oxide of calcium, or quicklime that confronts us here) by a glycol retardant. Afterwards, it was necessary to renew the "ocalex provision" once and sometimes twice, in the case of important granulum. Finally, it was necessary to complete the filling.

This is why Marmasse, after having qualified this method as being "very original" and "very seductive" adds "but we think that it will only replace the classical methods when it is simplified and freed of its minor inconveniences that we have observed".

FINALLY, HEXOCALEX IS DISCOVERED.....

The discovery of the "heavy" oxide of calcium, designated also as "hexocalex" (10) created a new revolution on account of its high expansible coefficient, which is three times more important than any former material. It is considerably more stable than the "light" oxide. Its reaction to hydration is about ten times less lively. Its provisional expansionary reserve permits to effect only one single application without recourse to any eugenol filling.

Finally, the X-ray problem is solved due to the greater density of the oxide of calcium and the associated oxide of zinc. This radiopacity can then be ascertained under the following conditions :

At first X-ray, appropriately contrasted, must show an empty canal. This will serve as a comparative test.

A second X-ray must be taken immediately after the introduction of the ocalexic paste, and this introduction must be made into the accessible section of the canal, (do not wait more than five minutes, because the expansion commences and modifies everything). This will show a canal manifestly filled.

Afterwards, the radiopacity diminishes normally with the expansion. We have been able to rectify this partly by adding to the ocalexic powder an equal amount of oxide of zinc. The expansion is certainly reduced; however, although minimal it is still adequate.

Because of this procedure, we have been able to study by means of radiology and thus follow, in vivo, the progression of the expansion towards the apex.

However, it is extremely necessary, for such a study, to obtain X-rays which are very contrasty in the zones more radiopaques (this is done by eventually using a filter which eliminates the soft rays of certain generative forces of X-rays). Also attach a negatoscope with a strong illumination which can be controlled by means of a diaphragm or mask in order to eliminate the lateral rays of light. Better than this, it is possible by the use of good negatives, to obtain positives, more or less contrasty, which will reveal in the black rays, differentiated grays which were hitherto undiscernible on the negative. (See figs 1, 2, 3)

With "hexocalex" there is a specific expansion of ocalexic material when it passes from the "heavy" to the "light" structure at the time of dehydration. Under these conditions, and if a mechanic restraint opposes this expansion, there is then an impansion

which means a compression towards the interior, thus producing a hard material "marmorean" (marble or chalk) and not the "selenitous" containing sulfate of calcium (plaster and cements).

Consequently, in the case of a canal which is not rimmed up to the apex (which is recommended) and if each "foramen" hole is a very small one (in accord with the etymological definition), the quantity of water immediately disponible is very limited, and then the filling of the canal is obtained with a very hard and condensed material.

If, contrary to this, the canal is rimmed up to the apex, the hyperexpansive oxide of calcium disposes immediately of the quantities of water which are very important, and since there is no constraint opposing the expansion, all of the oxide is transformed into a thick pasty hydroxide, fixed by superficial penetration and carbonated on the wall of the canal.

Under these conditions the penetration of the canal with a probe is so easy that one has the impression of probing into nothing. This is really not the case : for the obturation in this case is due to the fact that there is a condensed material on the wall which is fluidified in the centre. This central fluidification, observed by Cohen-Scali (11) in the tubuli themselves, is not a disadvantage, for there is no need to fear particularly the loss of the hydroxide activity because if we dilute it to its extreme, which is 1/10 000, it is still a bactericide and always biophile.

However, the habit, like a second nature, being acquired, one likes to meet an obstacle by a hard material during the attempt to probe the canal. Thus, when Bernard, in order to satisfy this "caprice" proposes to introduce secondarily into the fluidified mass, or initially before the expansion, a trigone which fixed to the wall of the canal, forms a rigid framework for the ocalexic mass and thus directs the pasty element onto the lining. The trigone thus responds to a triple finality : hardness, lateral condensation, and a greatly accentuated radiopacity. (12)

All of this being established, we can now continue on with our personal clinical experiences :

From 1300 cases which we treated, we have obtained 98.5% confirmed successes in the course of time. At the outset there was the disappearance of all signs of suffering, and the patients satisfaction 100%. During the course of time, certain setbacks appeared. However, no method is infallible, taking into consideration the number of teeth involved, on which on many occasions the roots being in such condition that they were treated for experiences only and despite all problems. Some of these condemned teeth may have produced a result which permitted us to do an artificial reconstruction; however, that which is remarkable is that the results obtained are identical to those formerly obtained with ionophoresis, and superior to those obtained with bakelite added to hydrocortisone (this last mentioned helped to conceal the post-operational reaction). They were also superior to all of the treatments realized with different techniques in 24 years.

We can specify that these successes have been obtained more often without the intervention of canalari instruments other than "nerve pullers" (hand or mechanical) and have only been by the results obtained from the single action of heavy oxide of calcium. We can therefore affirm that the ocalexic therapy is one of the most efficient and very easily practicable.

Strong antiseptics provokes a periapical reaction, weaker, but repeated or indefinitely prolonged, they harm the biological equilibrium and the periapical regeneration.

The modern antibiotics, in situ, could hinder the microbic life, but cannot destroy it, and like the corticoides, they are biologically and chemically degrading, that is to say "they be-

come organic waste and a veritable source of microbial culture ". In general, antibiotics have no action on local and endodontic infection.

CONCLUSION :

It is extremely difficult to condense into a few words so many new notions, therefore we can only resume in one single word : satisfaction.

The hexocalex therapy takes us out of the conservative paths and prejudices of the classic methods. Furthermore according to Bernard, one can only conclude provisionally as everything progresses, and since in his epilogue on " ocalexic therapy " as Marmasse recalls it in adopting its ethic " all is not finished, all will probably not be finished so long as it is true that there is no limit to research, only degrees " (13)

We are now therefore at the degree of " heavy " oxide of calcium and already the following degree has been announced in a " prologue " to a " Conceptional revision of Endodontiques " which tends towards a resolutely " anti-drug " concept of the stopping of the neodentary of the canals by a palingenesique pulp (of the second generation). This stage shows itself in the lineage extraction of the ionophoresis of the ocalex and of the hexocalex.

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IMAGES .

- Fig. 1 Positive photo of a normal X-ray plate which show clearly the characteristics of the bone tissue. However the canals are indistinct insofar as the uniform radiopaque mass of the ivory of the teeth are concerned.
- Fig. 2 From this same negative, the positive is very clear. The bony structures and the desmodontiques details have disappeared, however, we can perceive clearly the endo-canalair formed by oxide of zinc and heavy oxide of calcium still inexpansive and not occupying any of the canaliculi space.
- Fig. 3 The image of No.2 is similar but the X-ray has been taken 24 hours later. One can ascertain here the lateral expansion and the depth of the filling material in the canals with, (due to the expansion) a reduction of the radiopacity in the direction of the apex.
- Fig. 4 Two dentenaires tubuli dark (empty) at the bottom of which we can distinguish twisted collagen fibres, the drying of which is necessary for exploration by an electric scanning microscope.
- Fig. 5 Two tubuli filled by the expansion of ocalox which is in perfect coalescence with the wall. On the other hand, one can discern in the middle, a trough formed at the moment of desiccation which also reveals the relative central fluidification. This condensed parietalization with central fluidification in the large canals has been already pointed out by Bernard who, by extrapolation had foreseen that parietalization occupied all of the tubuli. The second expansion in the solid phase of the hexocalox must suppress the central fluidification. Cohen-Scali is verifying this through further researches.