COMPARATIVE CHARACTERISTIC OF THE MECHANICAL STRENGTH OF COMPLETE DENTURES PERFORMED BY STANDARD TECHNIQUE AND IVOCAP TECHNOLOGY

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SUMMARY:

The record of complete denture performing is almost the same as hasn't undergone any changes since the introduction of acrylics by Kulzer in 1935. The air, included into the dentures, decreases their mechanical strength. This problem is solved by inventing the IVOCAP technology by IVOCLAR VIVADENT.

Key words: IVOCAP technology, MDI

PURPOSE:

Comparison of the mechanical strength indices of complete dentures, made by standard technique and IVOCAP technology.

INTRODUCTION:

Frequently encountered clinical situations in which it is necessary to use the roots of natural teeth or implants for retention purposes prostheses. (Fig. 1.) The rezilents of the mucousis, on the one hand and the rigidity of the roots or implants on the other, lead to the occurrence of structural balance. The long period in balance leads to premature fatigue of the material and ultimately to fractured. In such cases, recourse to casting removable prosthesis. This makes the treatment expensive, and adding another alloy, increases the risk of corrosion. With the emergence of Ivokap technology the total strength of the prostheses, has increased which makes it unnecessarily reinforced by casting grill. Ivokap nature of technology is that it is uses to special locking cuvette (fig. 2., fig. 3.), to withstand high pressure automatic mixing of plastics (fig. 4.) and ensures the tank with plastic nonpolimerizat plastic that fill with 6 bar pressure throughout the polimerizations cycle.

Fig. 1. Over dentures clinical case

Fig. 2. The special polymerization box before closing

Fig. 3. The polymerisation box locked in the pressure resistant unit

Fig. 4. The mixing unit

METHODS AND MATERIALS:

40 acrylic blocks with dimensions 10mm/30mm/7mm. 20 blocks are worked out by standard technique and the rest 20 blocks – by IVOCAP technology. Measuring device for the mechanical strength indices ZDM 2,5/01, speed 4sm/min.

32 patients with 36 lower complete dentures and overdentures worked out by standard technique and 17 patients with 22 complete dentures and overdentures by IVOCAP technology.

The half, - about 10 bloks of each groups were made older with the method of temperature shock.

RESULTS:

1. Laboratory – this experiment clearly shows the higher/better mechanical strength indices of the blocks, worked out by IVOCAP technology.

Table 1. The results of experimental laboratory study

		Ivocap		standard technique	
		New	Older-looking	New	Older-looking
Average		1468,18	1187,31	985,49	915,482
Standard middle error		91,182	87,13	30,5381	9,767
Standard deviation		294,5	253,9	96,4531	30,919
Confidence interval	from	1248,54	1025,91	915,541	897,57
	to	1667,61	1371,87	1053,54	941,764

2. Clinical – standard technique – 4 broken dentures by the 3rd wear and 2 by the 4th.

– IVOCAP – no broken dentures.

DISCUSSION:

The tank with unpolimerized plastic, supercharged to 6 Bar during the whole polimerization cycle, (fir. 5.) refuses working out dentures free of microair pores. This gives the great mechanical strength of the IVOCAP dentures

We can say that the IVOCAP dentures cast in a mould. (fig. 6.)

Fig. 5. The IVOCAP prosthesis during the polymerization

Fig. 6. The fabricated prosthesis

CONCLUSION:

It is recommended to work out complete dentures by IVOCAP technology, due to their better mechanical strength indices.They are especially suitable by pronounced maxillary suture, all cases of overdentures and by implant supported removable prosthesis.

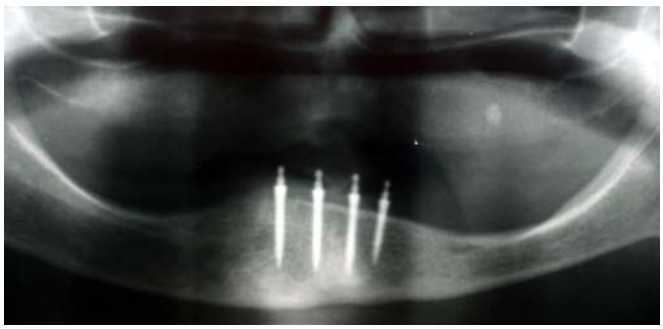

Fig. 7. Orthopanthomografy with 4 MDI

Fig. 8. The clinical situation of the same case

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