

Bioceramics

in the treatment of chronic wounds



MUDr. Jana Táborská
Prosthetic department, Masarykova
nemocnice v Ústí nad Labem, Czech republic

Bioceramics in medicine

Chemical composition

1. Dental implants - Calcium Phosphate, 2. Endoprotetics – Hydroxyapatite,
3. Porous alumina is clinically used in the fabrication of orbital implants (Att1. spherical porous scaffolds, Baino et al., 2014; Baino and Vitale-Brovarone, 2015a).
4. Microporous Bioceramic Wound dressing (Aluminium Oxide granules filled in sterile non-woven fabric sachets in different sizes and form) (Att2. Weller, Sussman, Wound dressing update, 2006, Journal of Pharmacy and research Volume 36, No.4.2006)

Useful properties of Microporous Bioceramic Wound dressing

- Biocompatible / body accepted / Non allergic by long term use /
- High porose material (65%)= High capillary suction (ave.90kPa) and adsorption ability (resistance >1200kg), Intragranule Pore size 0,1-10 μm are working like a trap on bacterias and MRSA (SA 0,6 μm)
- High porosity increase the material's total surface, that binds exudate with bacteria (Cerdak Basic 10x10 cm have total surface area = 8,2 m^2)
- Free storaged granules in sachets – is guaranted continuously delivery of O_2 to the wound = minimalisation of anaerobic bacterias

Indication of Microporous Bioceramics Al_2O_3

Indication of Microporose Bioceramic Wound Dressings:

- All stages of the wound from gangrena to epitelisation
- Infected and non infected wounds with secretion (venous ulcers)
- Acute and Chronic wounds
- One Microporose Bioceramic dressing is alternative instead of combination Hydrogel + Primary + Secondary dressing

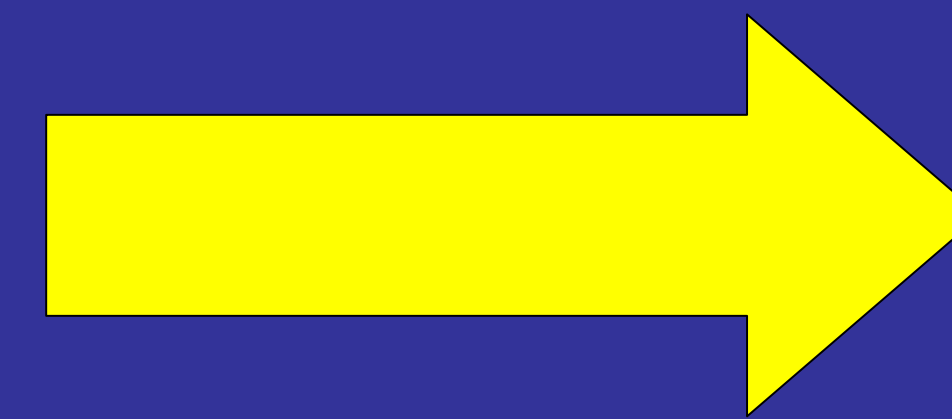
Microporose Bioceramic is effective used by

- Decubits with and without necrosis
- Venos and arterial Ulcus cruris, Diabetic foot, Skin fistula
- III. Degree of Gangrena, necrosis
- Neuropatic defects
- Non healing post op. Wounds
- Non healing open fractures (NPWT is contraindicated)
- Wounds with MRSA
- Complicated post plastic wounds
- Wounds after radiotherapy
- Burning wounds
- After Nail ablation

The size of the beads does not change, it only becomes dark with the secret.

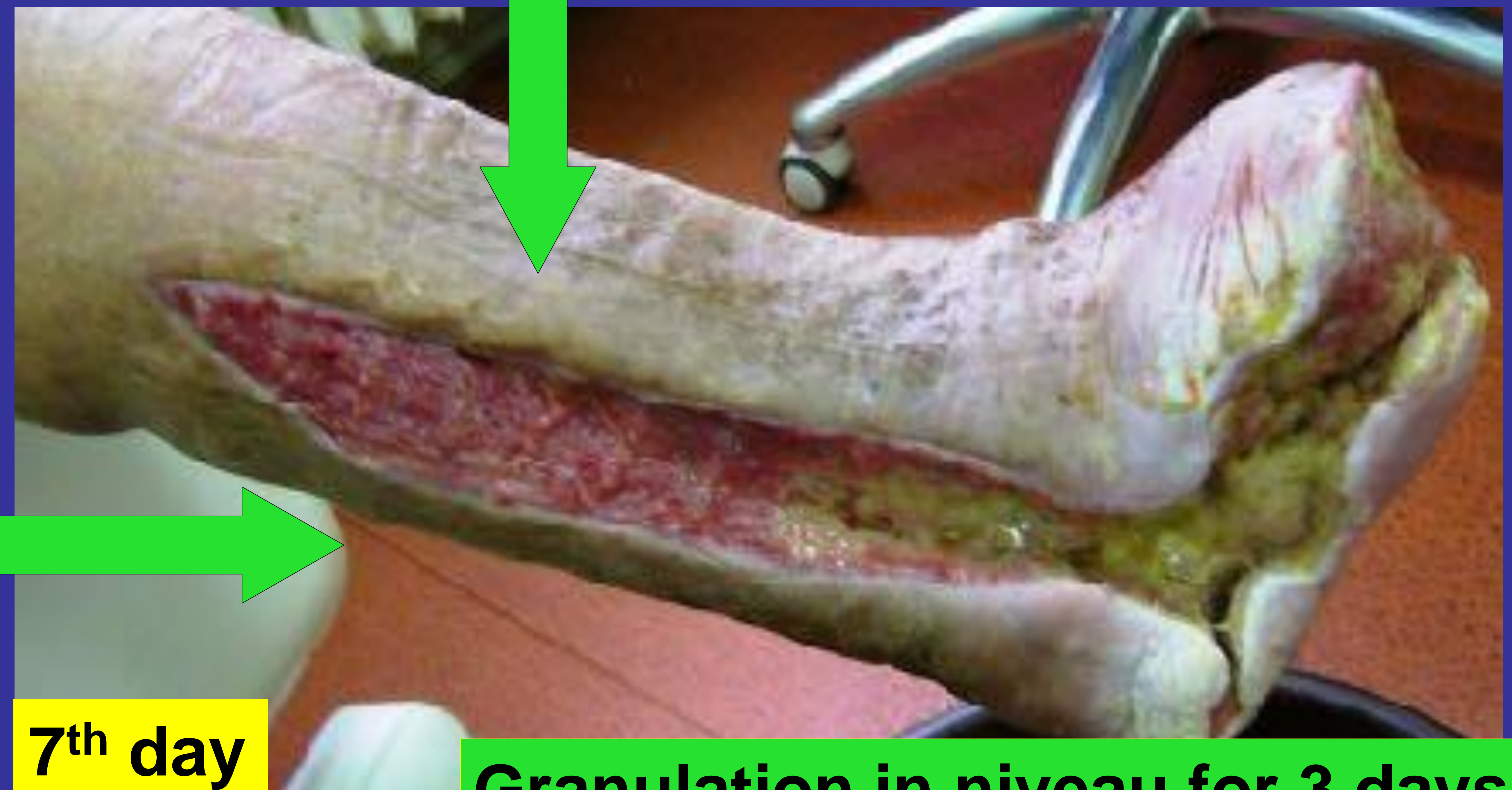
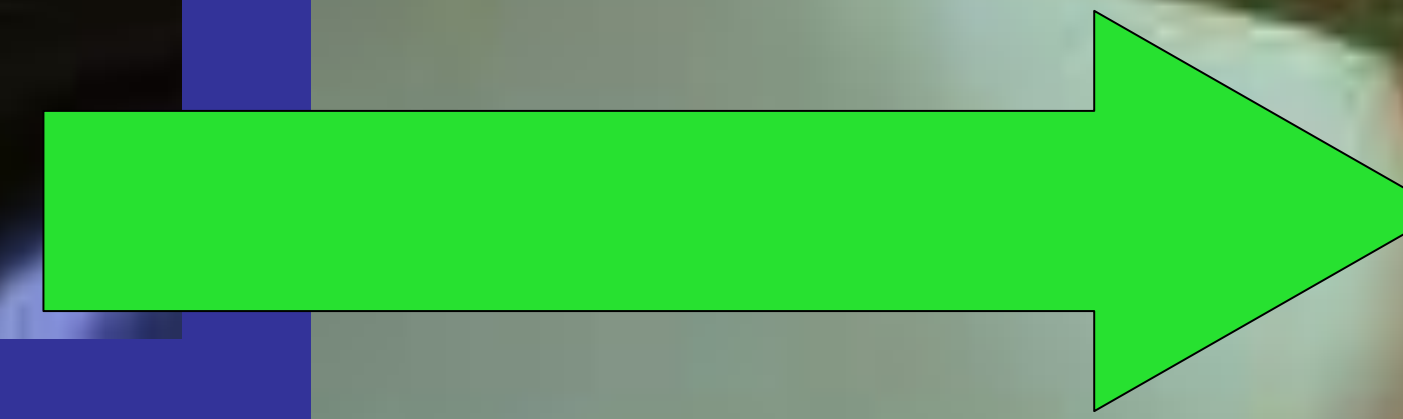


Bioceramics in practice



4th day

We used microporose Bioceramic Wound Dressing „Cerdak”



7th day

Granulation in niveau for 3 days

Conclusion for Microporous Bioceramic Wound dressing

„Moreover, high efficacy is reached in decontaminating the wound and eradicating the infection. A possible alternative to negative pressure therapy is bioceramic dressings.” (Glik Justina, Infection 02/2015, ISSN1644-4957)

„Our experience has proved the efficiency of Cerdak with a patient suffering from chronic decubitus with the presence of MRSA.” (President of Slovak Vascular Surgery, Prof. MuDr. Vladimír Šefranek PhD.)

„The using of advanced ceramic is suitable for less, middle and high exudating wounds. With very good effect they could be used by the infected wounds. Advanced ceramic is high perspective material in the wound healing.” abstract from „Advanced ceramic in healthcare”

MUDr. Ivo Bureš, President of Czech Wound Healing Association ”

Microporose Bioceramic Dressing plays an important role in combined treatment of hard healing, infected / non – infected, post operative wounds.

Thank you for your attention

jana.taborska@kzcr.eu