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The use of porcine urinary bladder matrix in wound care

Dr Sergio Mazzei – General Surgeon and Wound Care Specialist
Hydroptic Oxygen therapy and wound care Department
Diagram of the skin

➢ Epidermis
➢ Dermis
➢ Subcutaneous tissue
➢ Muscle
➢ Bone

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Epidermis

➢ Contact with environment
➢ Five layers
➢ The melanin gives the color to the skin
➢ It has got keratin, a water repellent protein

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Dermis

➢ It doesn’t contain cells

➢ Contains nerves for sensation of pain, pressure, touch and temperature

➢ It is composed by collagen that it is important for the wound healing

➢ Collagen makes the skin stretchable and elastic

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Collagen

✓ **Type I.** It provides structure to skin, bones, tendons, fibrous cartilage, connective tissue, and teeth

✓ **Type II.** It found in elastic cartilage, which cushions your joints

✓ **Type III.** This type supports the structure of muscles, organs, and arteries

✓ **Type IV.** This type helps with filtration and It is found in the layers of your skin.
Porcine urinary Bladder Matrix Structural Component

✓ It is processed to remove cellular content and mitigate the inflammatory response

✓ UBM devices are a naturally derived, three dimensional scaffold with two distinct layers:

- Intact Epithelial Basement Membrane: A thin, dense structure which supports cell attachment and proliferation
- Lamina Propria: A rough, porous structure which supports cellular infiltration and neovascularization
Urinary Bladder Matrix – Application

- Wound Bed Preparation:

Before using urinary bladder Matrix, the wound must be debrided of necrotic or non-viable tissue and any infection must be managed.

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Urinary Bladder Matrix – Preparation and Application

• The product may be applied dry or may be mixed with saline or Ringer’s solution

• Apply the device(s) directly to the wound. Excess product that overlaps healthy tissue may be left in place.
Porcine urinary Bladder Matrix – Indications

- UBM devices are appropriate for acute and chronic non infected wounds
- It controls the pain
- It provides a scaffold for cellular infiltration and neovascularization
- Results in site-appropriate tissue where scarring would be expected
- It could be pre-fenestrated to support effective fluid management and wound drainage
Clinical case - 1

- Male patient who complained a lacerated wound with skin loss of the middle finger of the right hand, along with partial nail avulsion. A flap surgery was performed on 16th January 2019 at another Hospital. A partial necrosis of the flap was present after few days.

- The patient underwent three surgical procedures in local anesthesia, covering the open wound with CYTAL Wound MATRIX 3cm x 3.5cm 1-Layer.
Wound dehiscence
Wound dehiscence
Clinical case - 2

- Patient who experienced second degree thermal burn.
- Local ointment was prescribed, but the wound conditions deteriorated, and the patient was referred to our Department.
- Infection involved the skin and subcutaneous tissue until the left elbow, with local edema and pain due to *Staphylococcus Aureus* infection, that was treated with oral antibiotic.

- When the infection was under control, the patient underwent two surgical procedures in local anesthesia, covering the open wound with CYTAL Wound MATRIX 3cm x 3.5cm 1-Layer.
Clinical case - 2

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Clinical case - 2

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Different options

- Human acellular dermal matrix for wound healing
- Dehydrated human amnion/chorion membrane
- Collagen – Elastin Matrix bovine made
- Biosynthetic Polimer from sugar cellulose
- Type I horse collagen made with silver
- Ovine extracellular matrix (ECM) plus 0.3% ionic silver
Different options
Take home message

If you walk in the footprints of others, you won’t make any of your own

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