Co-occurrence of EB and Marfan Syndrome

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-Male, italian

-Age: 19 years old

-Dystrophic Epidermolysis bullosa (mutation in COL7A1)

-Marfan disease (also his father and his sister) diagnosed in 1999

- **CLINICAL HISTORY**
- Esophageal stenosis (balloon dilatation 2007)
- Surgical hand fracture (2010)
- Ectasia of the major arterial encephalic vessels (2015)
- Aortic valvulopathy and ascending aortic aneurysm (as consequence of Marfan disease)
- Intestinal occlusion for fecaloma and subsequent septic shock, total colectomy with ileostomy for intestinal stroke (2016)

Pub Med research

- Only one article (about this patient):

R. Gardella, L. Nuytinck,* S. Barlati, P. Van Acker,* G. Tadini,[2] A. De Paepe* and M. Colombi. Dystrophic epidermolysis bullosa and Marfan syndrome in a single patient. Clin Exp Dermatol. 2001 Nov; 26 (8):710-3

Abstract

Dystrophic epidermolysis bullosa (DEB) is a rare genetic skin disorder. In this report we have investigated an Italian child affected with recessive DEB (RDEB) and demonstrated that he was homozygous for the mutation R226X in the type VII collagen gene (COL7A1), leading to absence of type VII collagen at the dermal-epidermal junction. There was no family history of inherited skin blistering but the child's father was affected by Marfan syndrome, an autosomal dominant connective tissue disorder that results from mutations in the fibrillin-1 gene (FBN1). Analysis of this gene showed that the RDEB patient and his father were both heterozygous for a novel FBN1 mutation, C1971Y. This mutation affects one of the six obligate cysteine residues within one of the calcium-binding epidermal growth factor-like regions of the protein. At the age of 2-years the RDEB patient showed signs of early aortic dilatation, suggesting that he is likely to develop a Marfan syndrome phenotype in the future. This is a unique case of these two coexisting inherited disorders

Marfan Syndrome

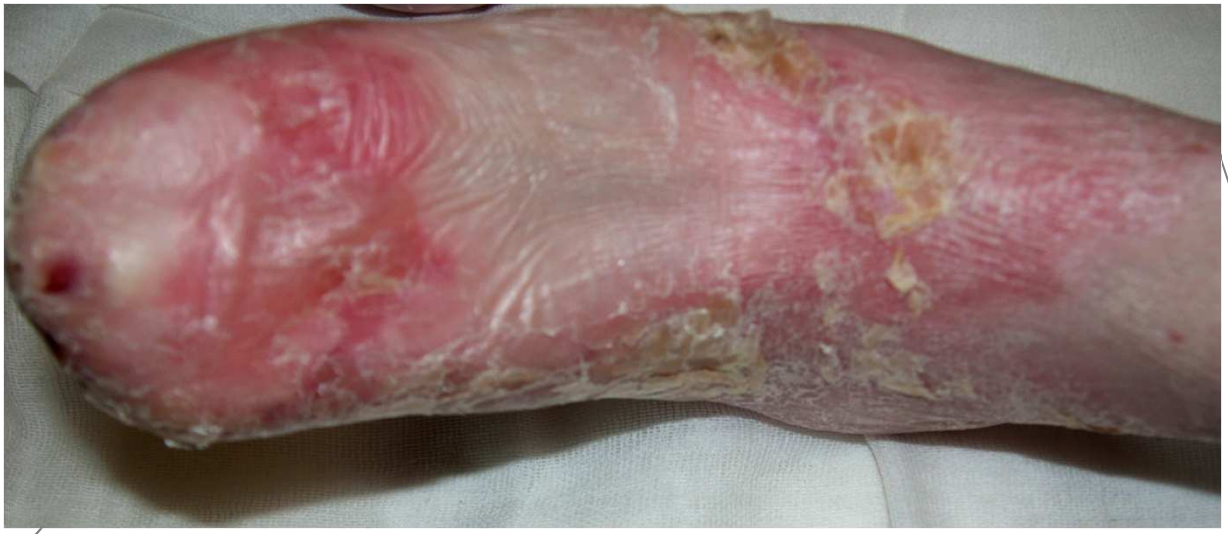
- Genetic disorder of the connective tissue (autosomal dominant inheritance, single gene disorder)
- One of the most common inherited disorders of connective tissue
- Incidence: 1: 3000-5000 individuals
- The syndrome is inherited as dominant trait, carried by the gene FBN1, which encodes the connective protein fibrillin-1
- Is caused by a single gene for fibrillin on chromosome 15 which is inhereted in most cases from an affected parent
- Fibrillin 1 plays an important role as the building block for connective tissue in the body
- The gene defects also cause to much growth of the long bones of the body
- The aorta may stretch or became weak (aortic dilatation or aortic aneurysm) as our patient
- Affects eyes and vision: nearsightedness and astigmatism are common, but farsightedness can also result
- There are also oral manifestation: one of the hidden sign of Marfan's is the high arched palate crowed teeth

Major and minor manifestations (in decreasing order of specificity)

- **Skeleton** (tall and slender body/long fingers and toes/arm spans longer than their body height/unusually flexible joints/ narrow face/high arched roof of mouth/crowed teeth/scoliosis/sunken or protruding chest)
- **Eyes** (dislocation of one or both eye lenses/ retinal detachment/ nearsightness/glaucoma/cataracts)
- **Cardiovascular** (aortic dilatation/dissecation/sudden death)
- **Nervous system** (dural ectasia)
- **Skin** (stretch marks/abdominal or inguinal hernia)
- **Lungs** (sleep related breathing disorders/if tiny air sacs become stretced or swollen, the risk of lung collapse may increase)

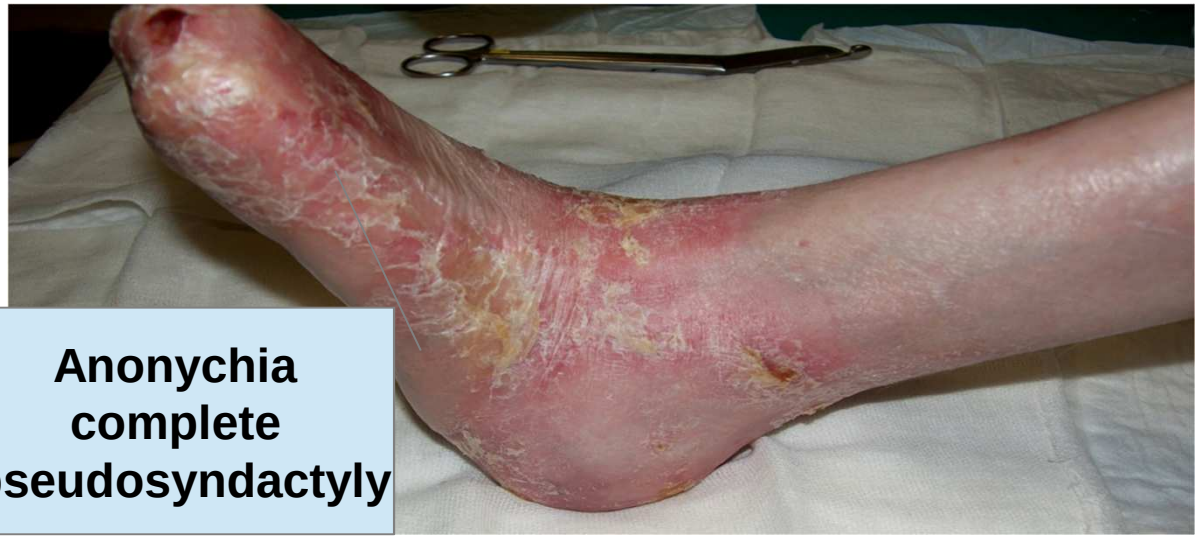
- There is no official cure for Marfan Syndrome (gene therapy might be possible in the future before the birth)
- At the moment : LOSARTAN
- A range of treatment can help minimize and somethimes prevent complications (individualized program)

Clinical aspects of our patient

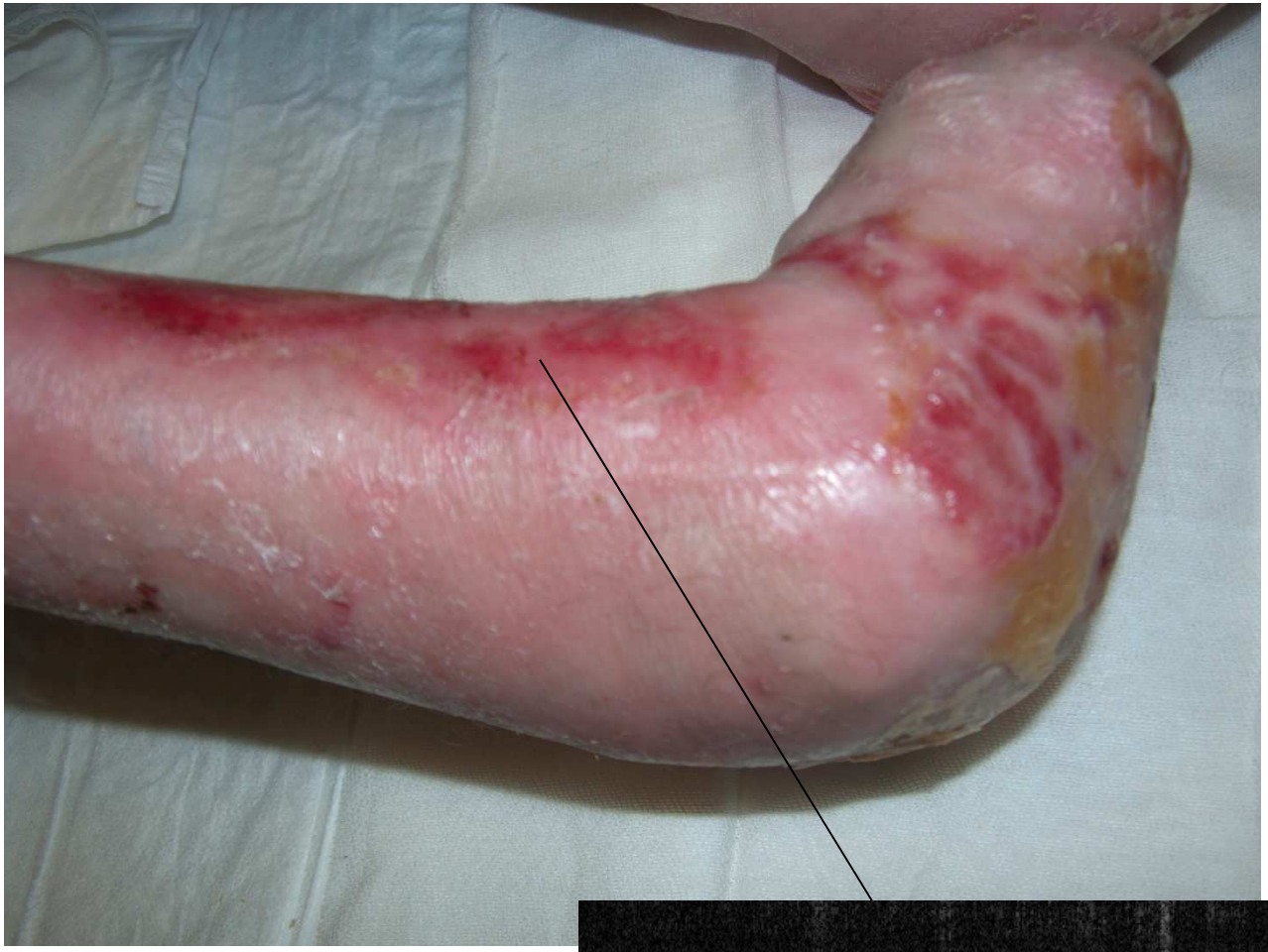


Hemorragic blisters,
erosions
and crusts

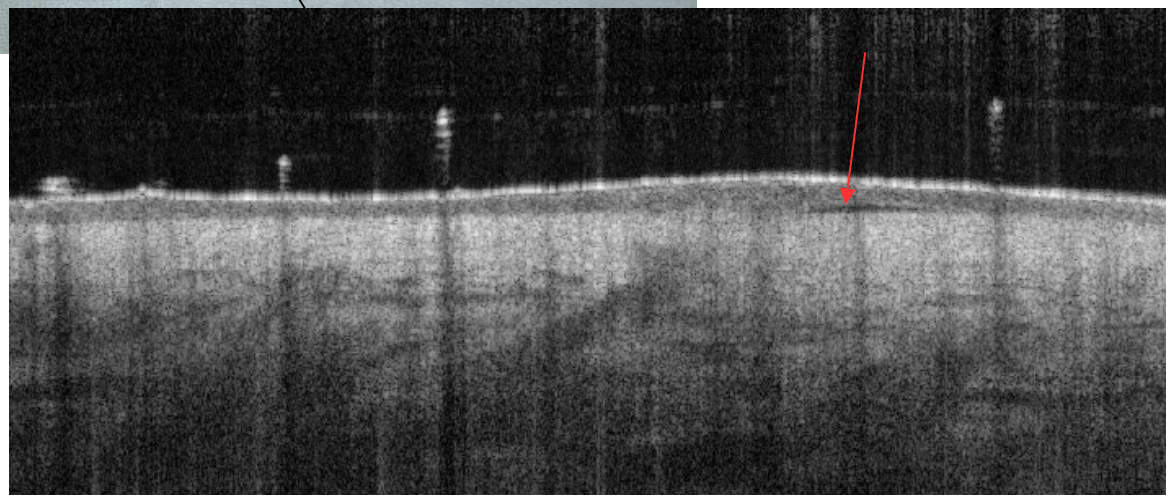
Severe contractures
of both feet with mitten
formation of all
toes make walking for the
patient impossible



Anonychia
complete
pseudosyndactyly

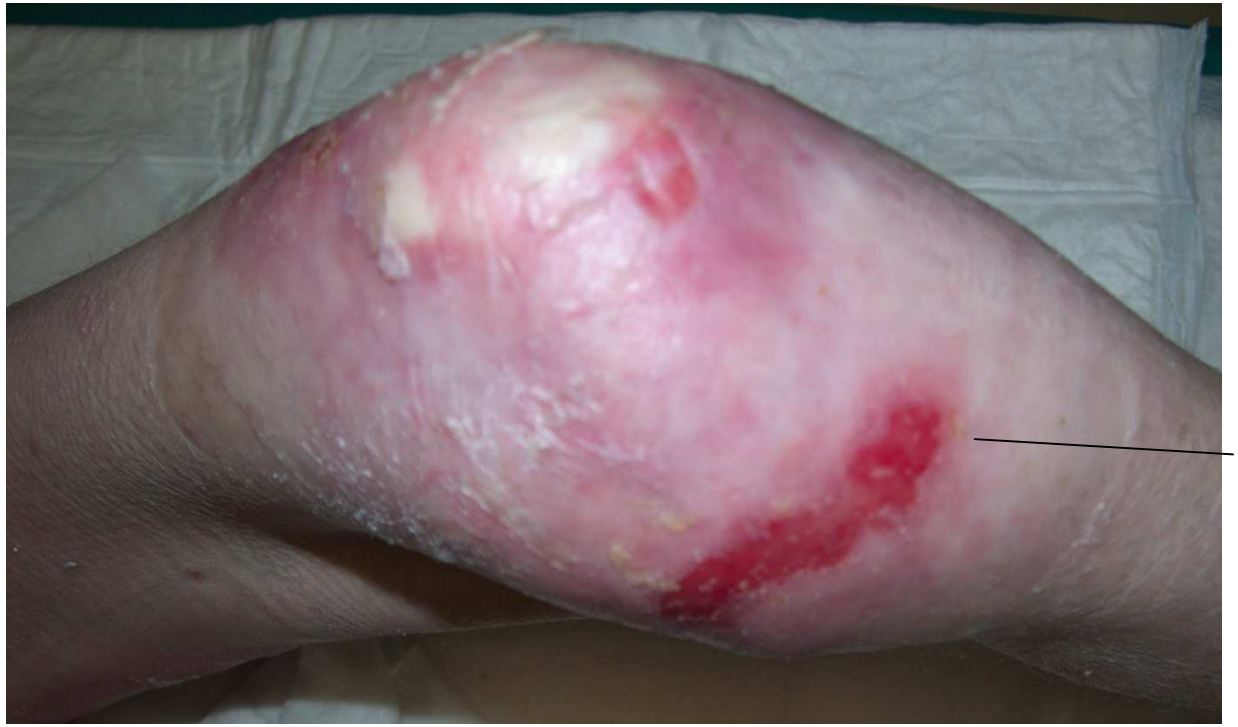


Perilesional skin microscopic/subclinical vesicles are visible (red arrows)



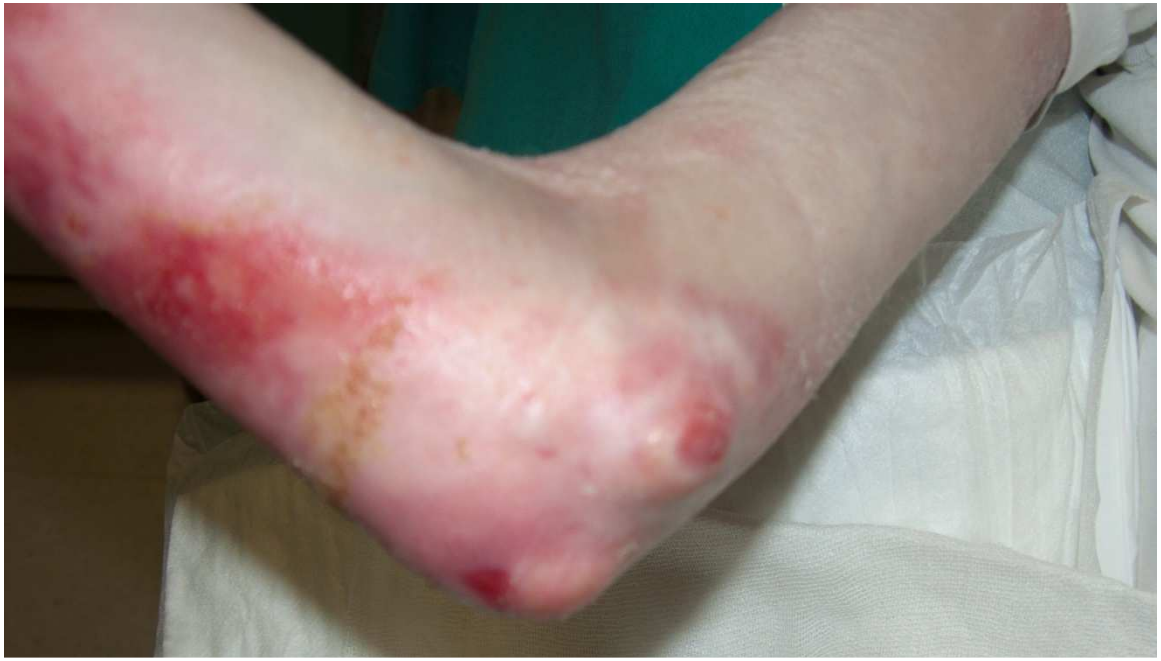
Optical coherence tomography (OCT)

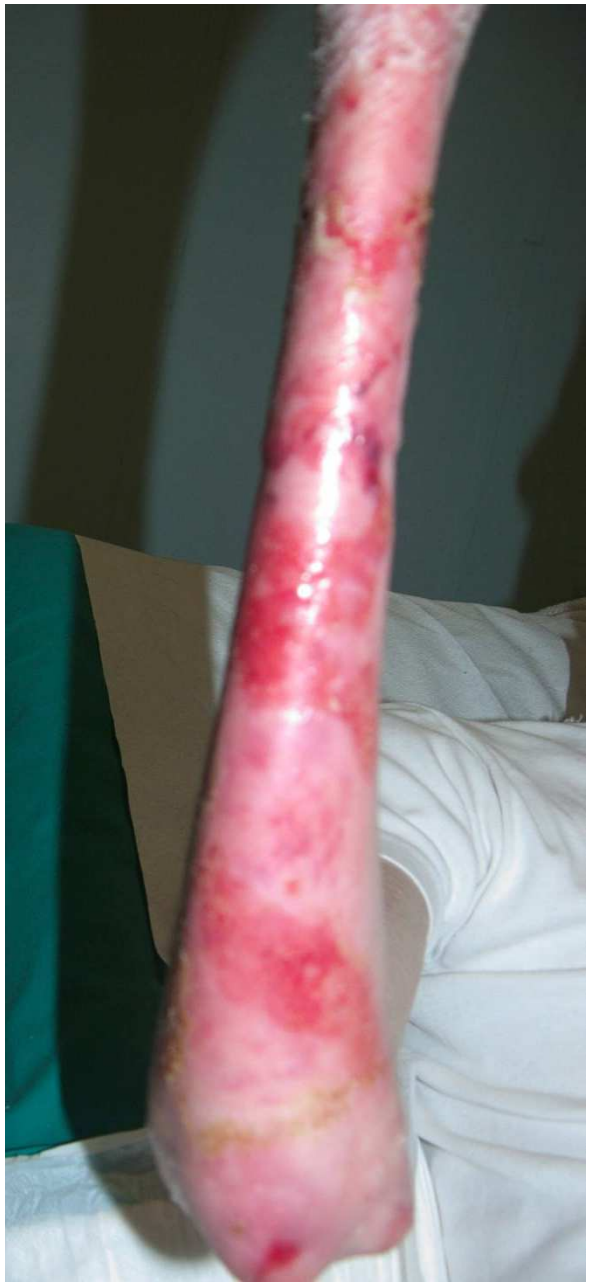
Details of joints

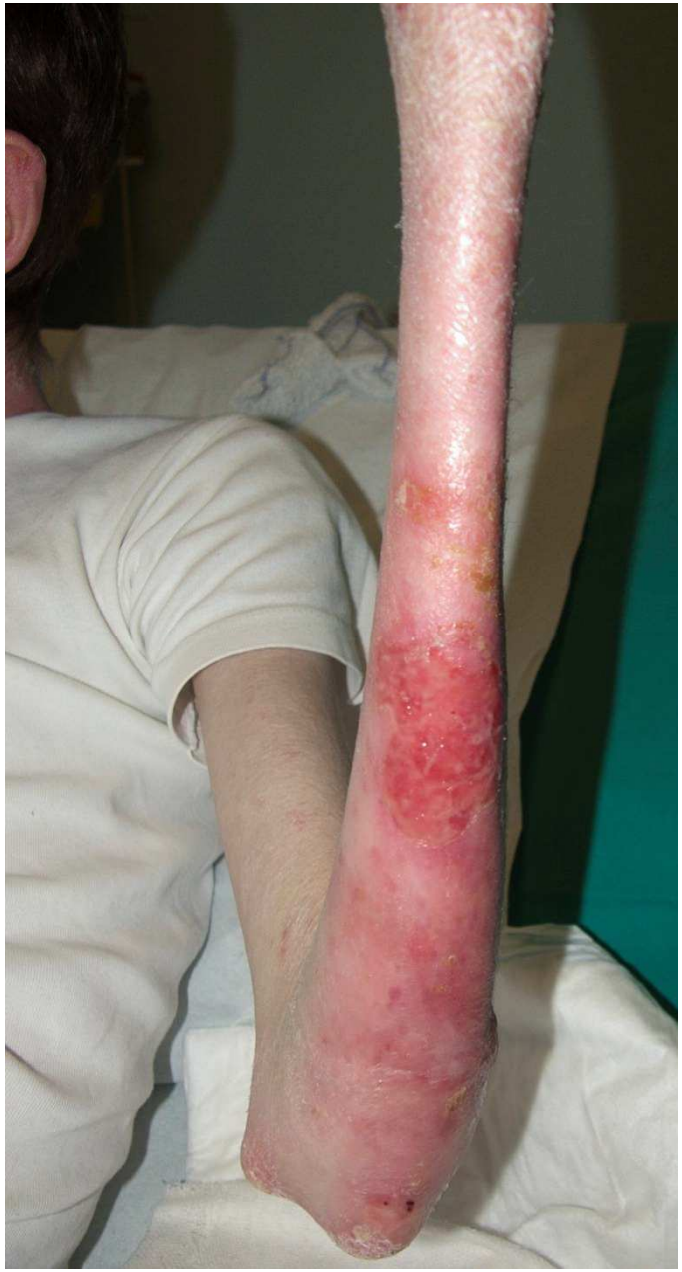


Knee with wounds and skin atrophy

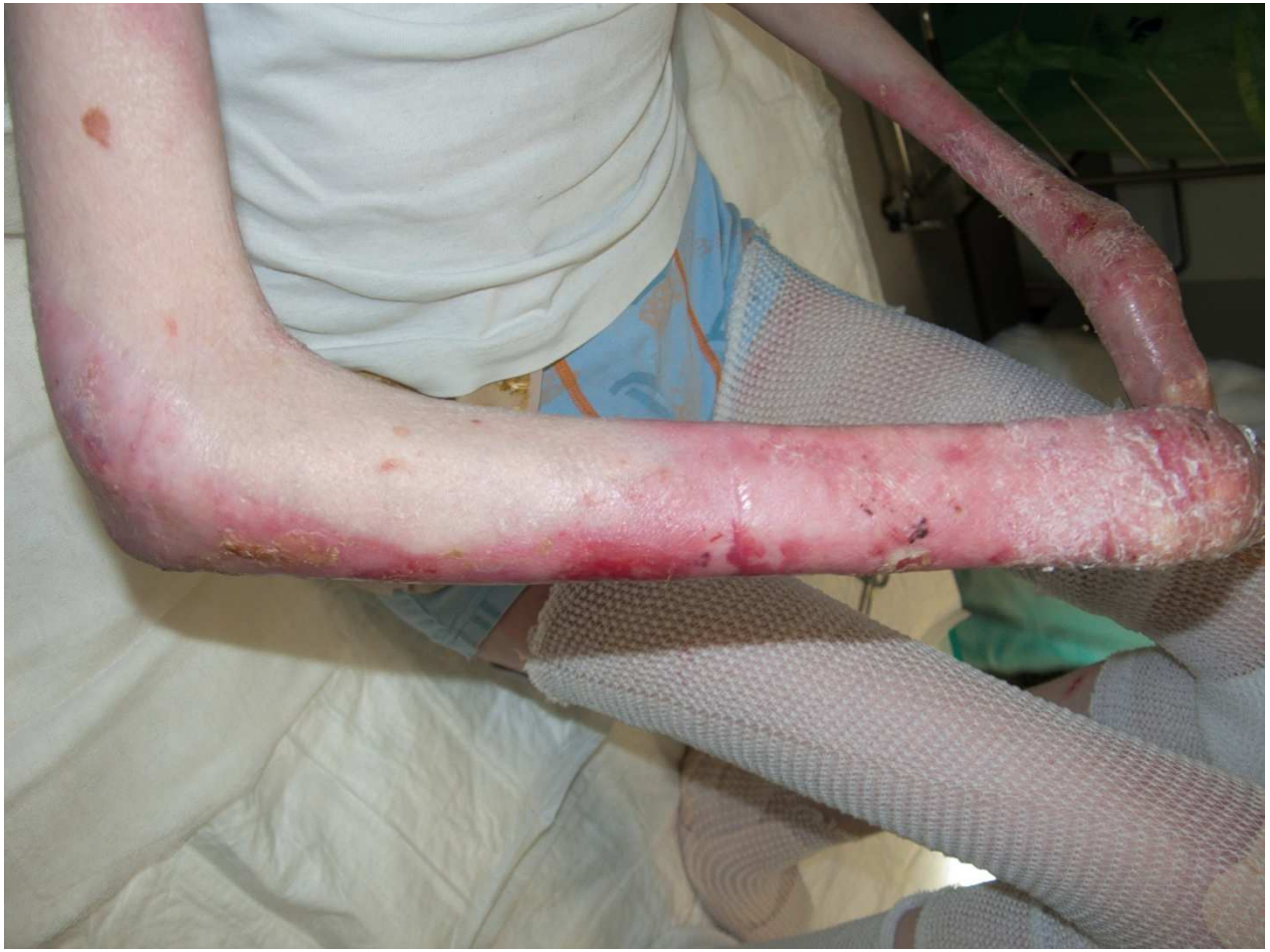
Elbow with skin wounds and atrofy





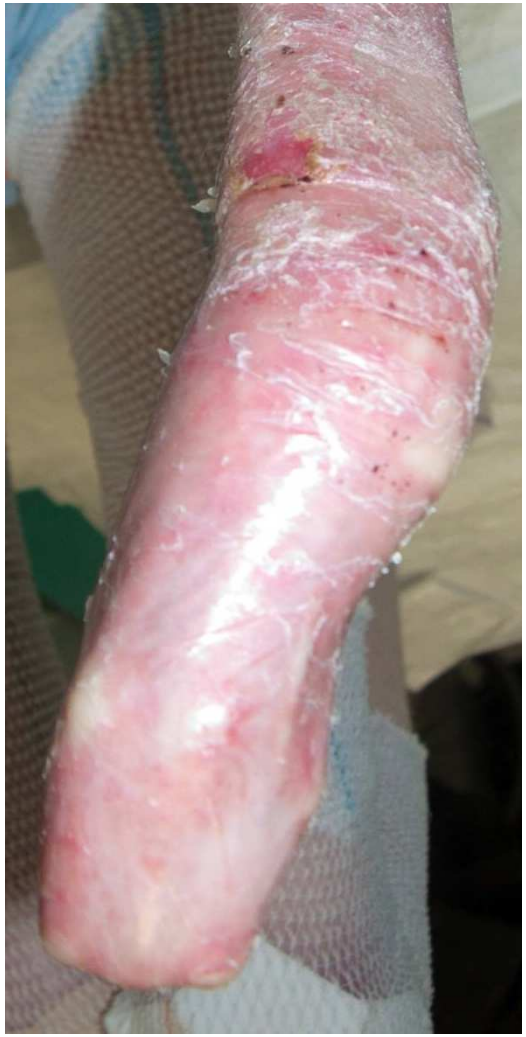


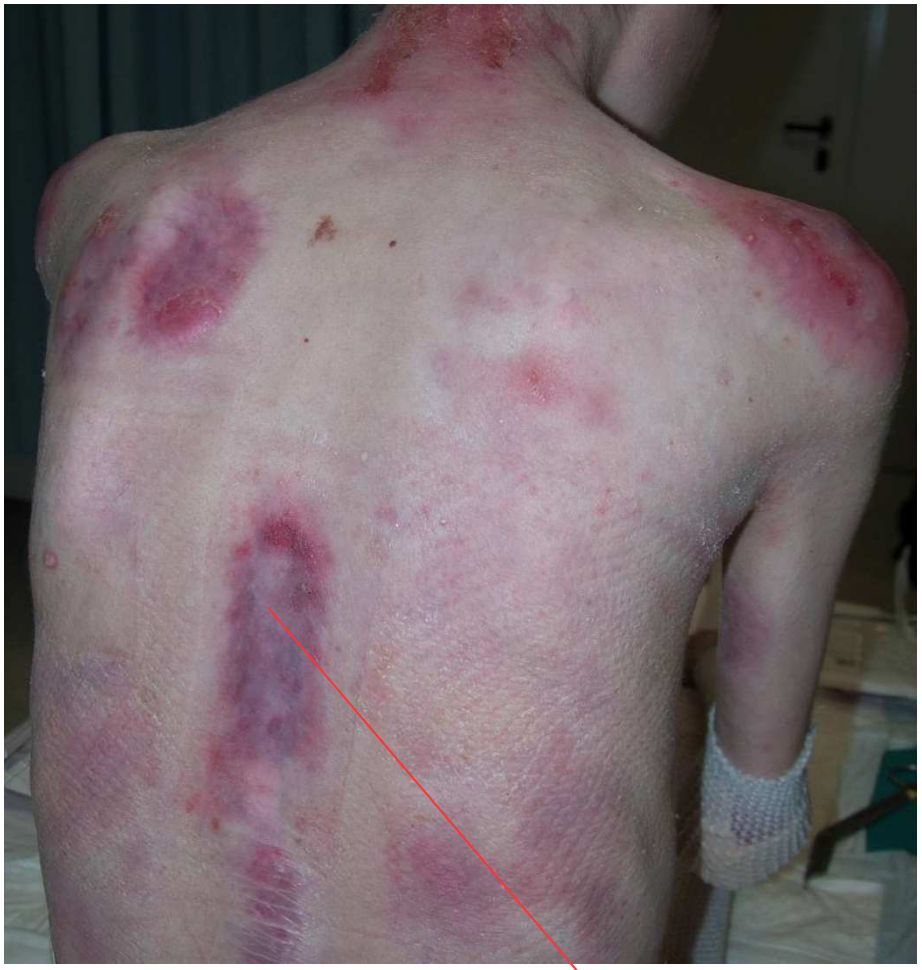
Clinical aspects of Marfan and EB: long arms and skin wounds



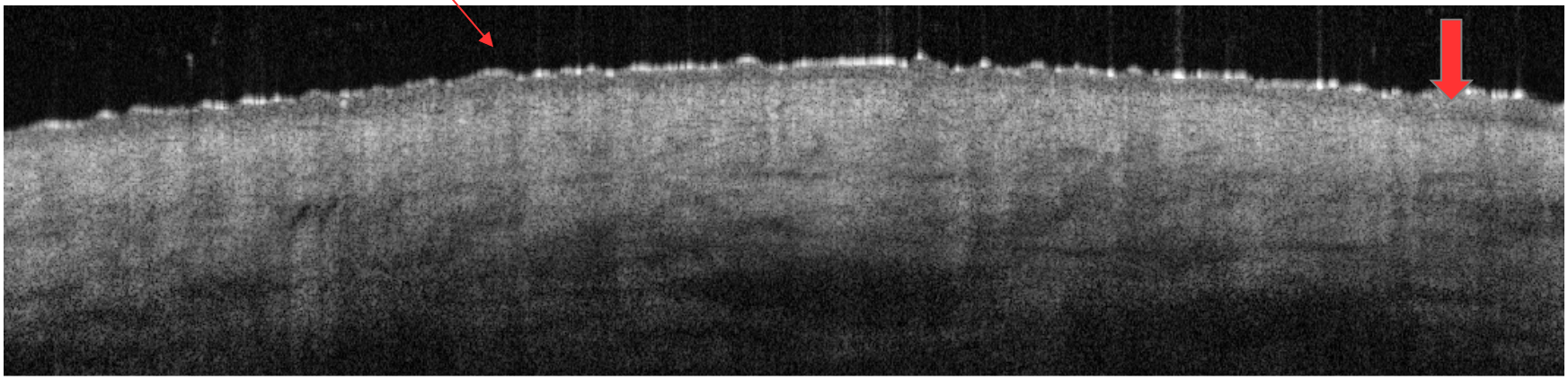
Right arm

A particular of left hand





Subclinical blister in perilesional skin of wound



Cardiovascular problems

- **AORTIC ROOT DILATATION (63 mm diameter)**
- **AORTIC VALVULOPATHY**

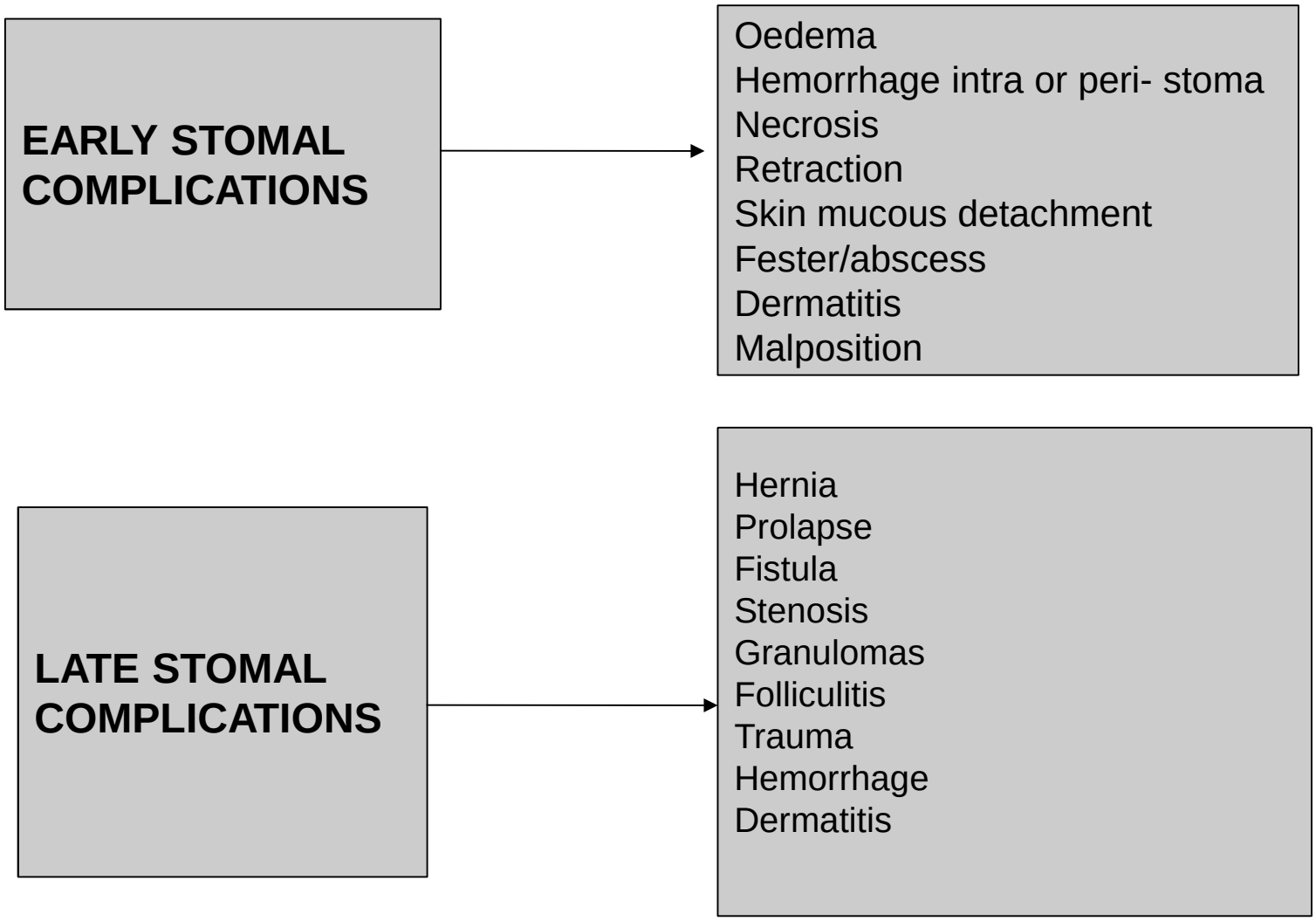
SURGERY VISIT: indications for replacement of ascending aorta and **prothesis** 's implant, but **high risk of infections (epidermolysi wounds and stoma). He is waiting for cardiac surgery**

CARDIAC THERAPY
NEBIVOLOLO 5 mgr 1 cpr/die
LOSARTAN 25 mgr/die
IVABRADIN (PROCORALAN) 7.5 mg 2 cpr/die

Ileostomy

- Creates a connection between skin and ileo
- Importance of stoma care to prevent infections

Classification of stomal complication

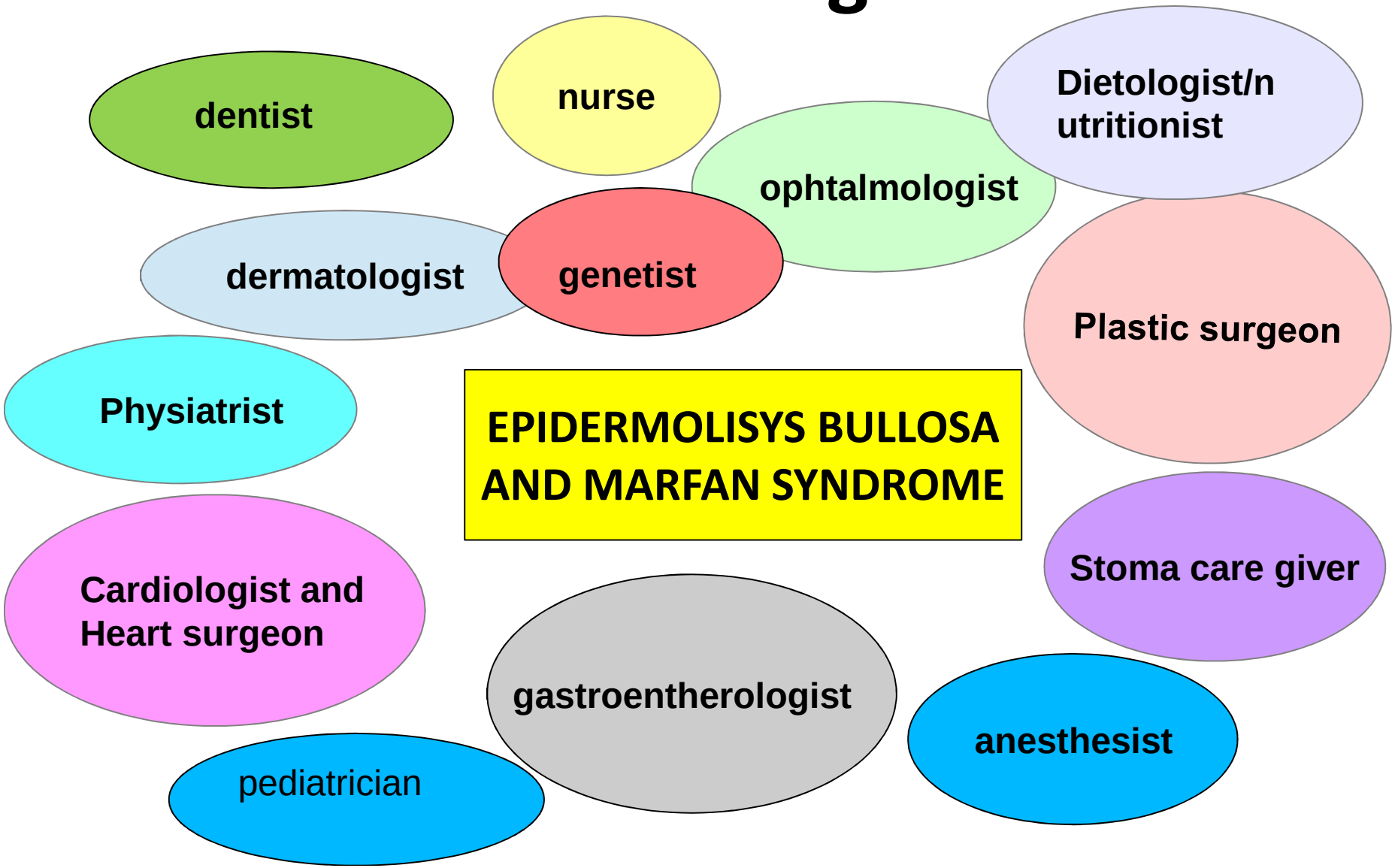


Clinical management

- Difficulty in managing the two concomitant pathologies and their complications
- **Prevention of possible skin infections**: skin wound dressing according to **TIME care** from dermatological point of view
- Importance of managing of ileostomy

Importance of clinical collaboration between all medical doctors inolved (**multidisciplinary staff**)

Multidisciplinary approach for correct management



Living with EB and Marfan is difficult but not impossible, and it is also possible to notice the beauty of the life

Our patient gradueted in high school with a thesis on “**beauty”** and passed test for literature course at University just a few days ago

Thanks to:

EB HOUSE SALZBURG STAFF, in particular Md Diem Anja

Prof. M. De Luca (University of Modena and Reggio Emilia)

Dr.ssa S. Bettinelli (University of Modena and Reggio Emilia)

Prof. G. Pellacani (University of Modena and Reggio Emilia)

Prof. A. Giannetti (University of Modena and Reggio Emilia)

Prof. C. Magnoni (University of Modena and Reggio Emilia)