

PITFALLS AND UNSATISFACTORY RESULTS IN THE TREATMENT OF VASCULAR ANOMALIES

Incorrect Management

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incorrect management

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graph LR; A[incorrect management] --> B[Pitfalls (peculiarities of the case)]; A --> C[Incomplete diagnostics  
uncertain hemodynamics;  
neglect of ISSVA-Classification]; A --> D[Wrong indication concerning  
the method of treatment]; A --> E[Wrong diagnosis  
- in all medical disciplines 15%) (Elstein 2023)  
- in all vasc. malformations 38%  
- In only venous malformations 70%  
(Vaisnyte 2009)];
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Pitfalls (peculiarities of the case)

**Incomplete diagnostics
uncertain hemodynamics;
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Wrong diagnosis
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Incorrect Management → Pitfalls (peculiarities of the case)



Pitfalls (peculiarities of the case): iliaco-spinal AVM

responsible for the enormous extent of the venous malformation and for the significant length discrepancy of the left leg



Pitfalls (peculiarities of the case)

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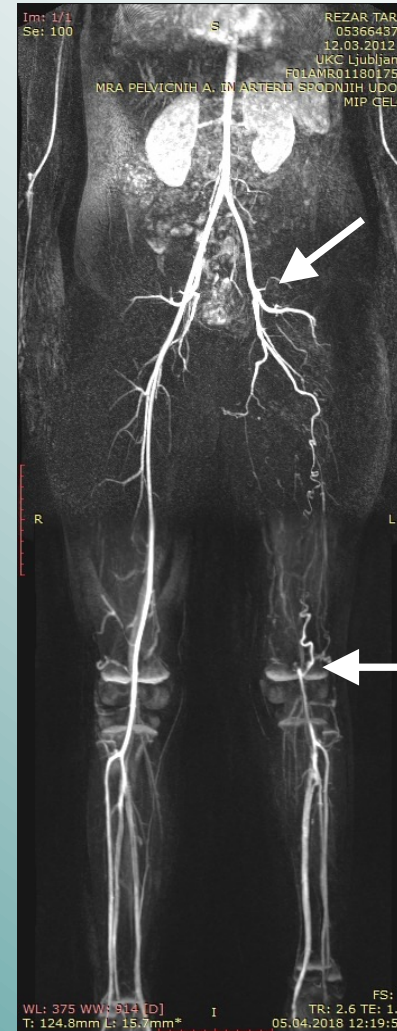
Incomplete diagnostics (uncertain hemodynamics; neglect of ISSVA-Classification)

The questions to the basic diagnostics should be:

- **Which is the predominant participating vascular system?**
- **How extensive is the malformation and which neighboring structures are involved?**
- **How severely are hemodynamics impaired: local, regional or systemic?**

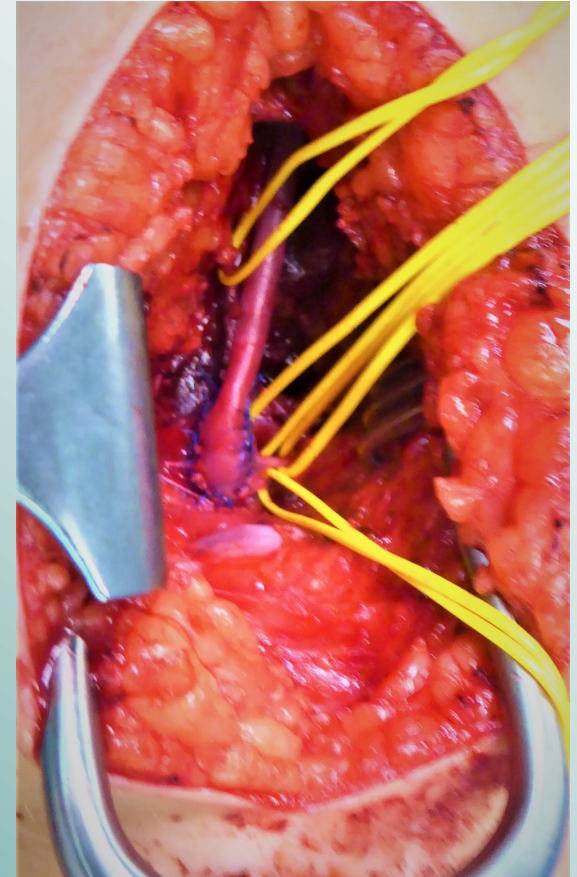
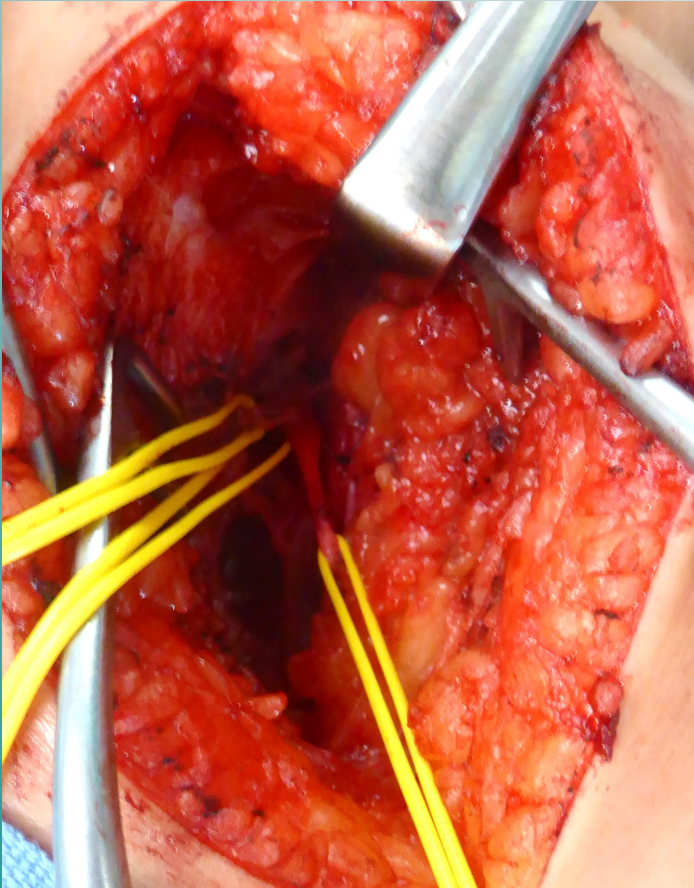
Incomplete diagnostics (uncertain hemodynamics; neglect of ISSVA-Classification)

With the diagnosis elsewhere of leftsided hypotrophy and length discrepancy of 4 cm orthopedic surgery was recommended: lengthening of the left tibia with an external fixateur



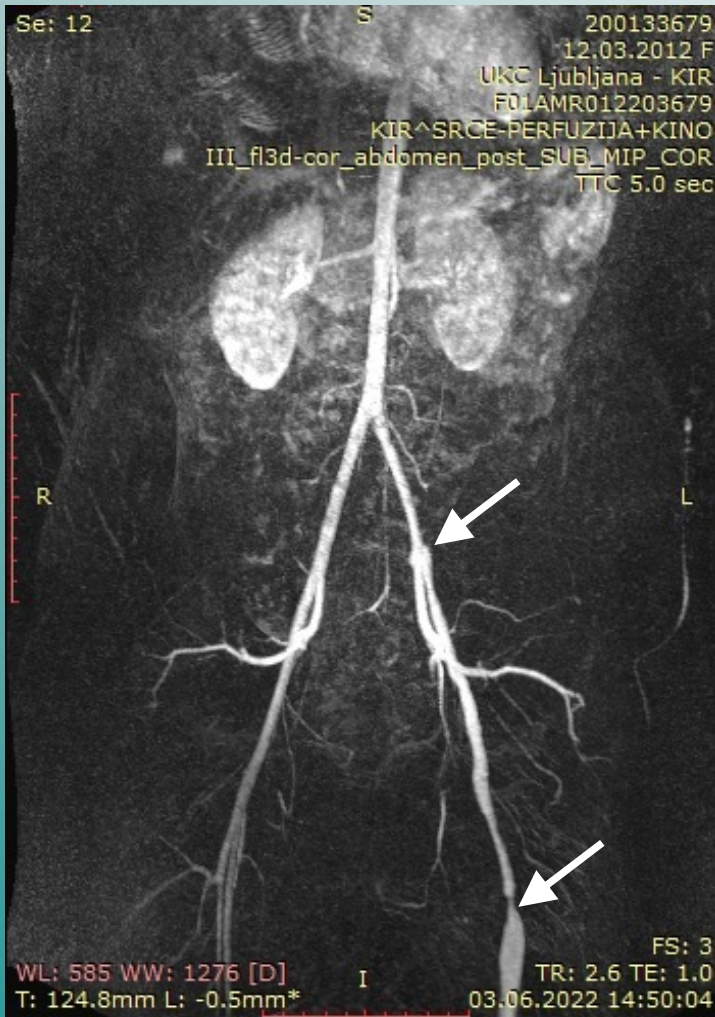
Incomplete diagnostics (uncertain hemodynamics; neglect of ISSVA-Classification)

The only correct treatment was an autologous venous interposition-bypass iliaco-popliteal on the left side with intermittent anastomosis at the left groin



Incomplete diagnostics (uncertain hemodynamics; neglect of ISSVA-Classification)

1 year after vascular surgery the length discrepancy is reduced from minus 4cm to minus 1,5 cm



Pitfalls (peculiarities of the case)

**Incomplete diagnostics
uncertain hemodynamics;
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incorrect management

**Wrong indication concerning
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Wrong diagnosis

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Wrong indication for the method of treatment

8-year-old girl with gluteal vascular malformation and skin involvement



Situation after attempt of plastic surgery elsewhere



Wrong indication for the method of treatment

Arteriographic documentation of the extent of an AVM of the right internal iliac artery



Situation 30 years later after several steps of interventional and vascular surgical occlusions of the AV-fistulas



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Wrong diagnosis

Under the suspicion of an extensive cutaneous naevus, parts with pain regions were extirpated.

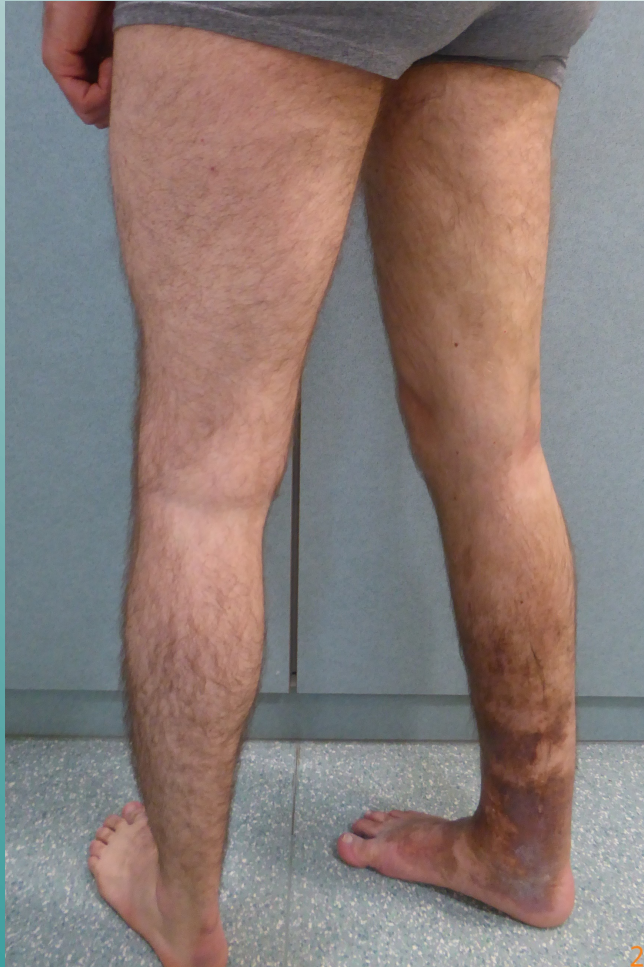
Histology: infiltrating angioliipoma without capsular and capillary malformation.

The malformation demonstrates an area-wide expansion also to the trunk controlled during more than 15 years.



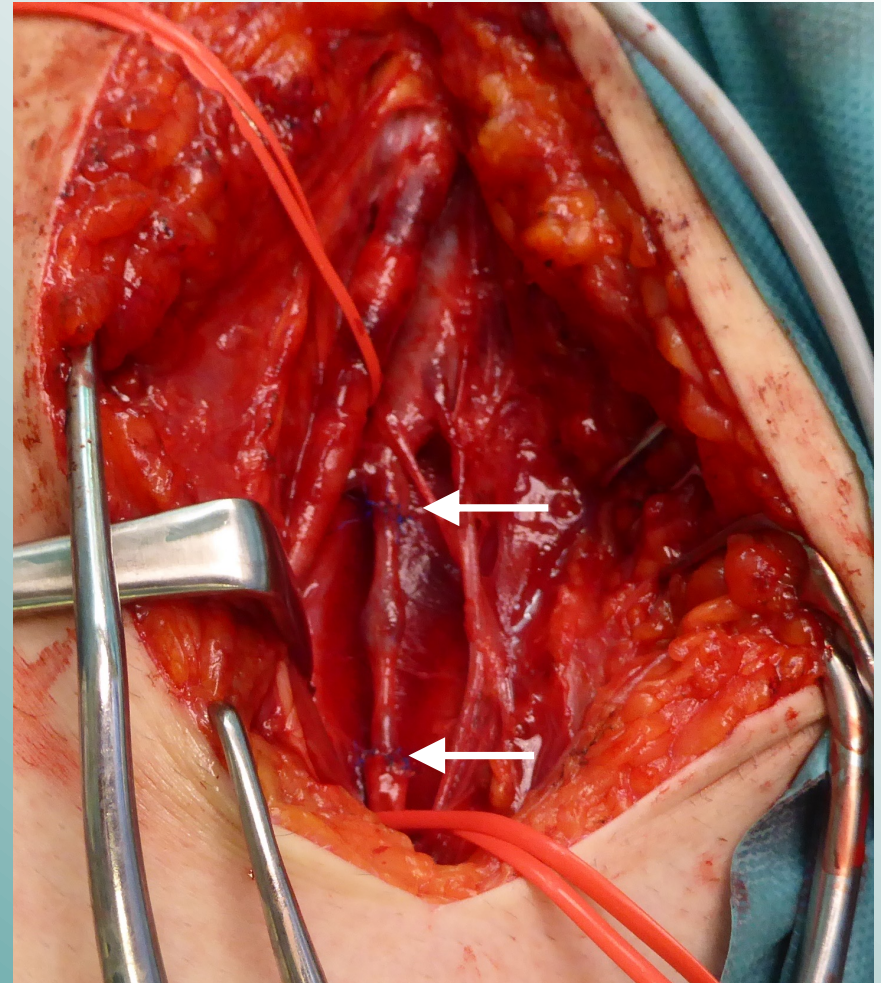
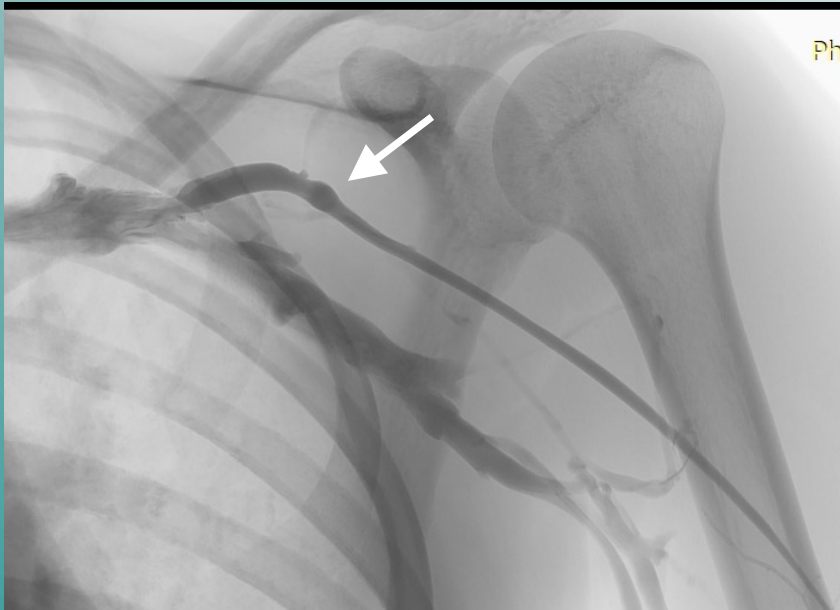
Wrong diagnosis

After multiple steps of treatment elsewhere (sclerotherapy, surgery, laser), the 20-year-old patient was planned for amputation, because of untreatable heavy pain in the whole right leg. The reason was venous valve aplasia with heavy stasis.



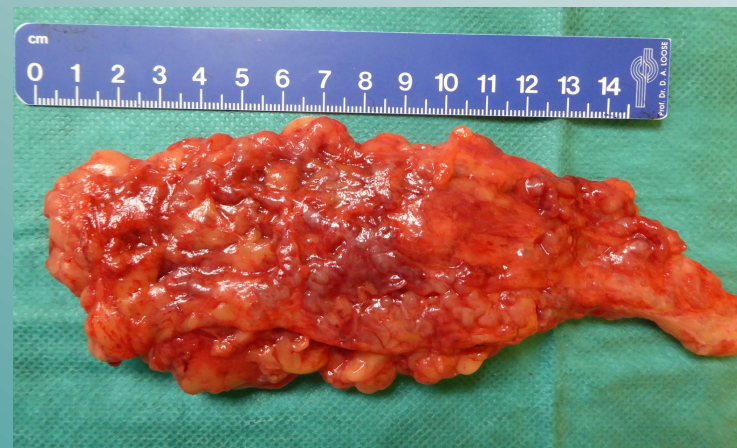
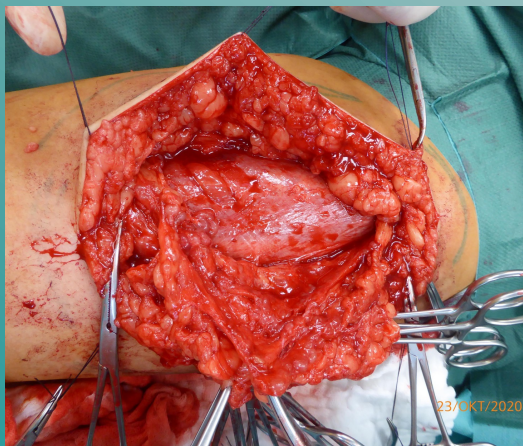
Wrong diagnosis

A vein-valve-transplantation of an autologous segment of the left axillary vein end to end into the right superficial femoral vein saved the left leg.



Wrong diagnosis

The clinical diagnosis and the MRI-diagnosis was a „venous malformation“.
The histologic diagnosis was „Morbus von Recklinghausen Type I“.



wrong treatment

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graph LR; A[wrong treatment] --> B["wrong decisions  
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or ignorance of well established  
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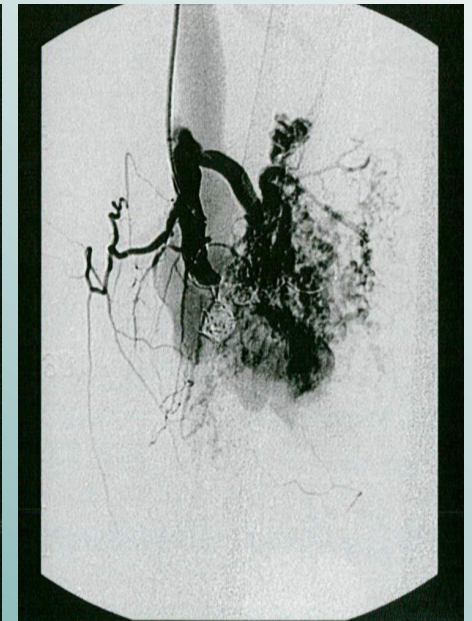
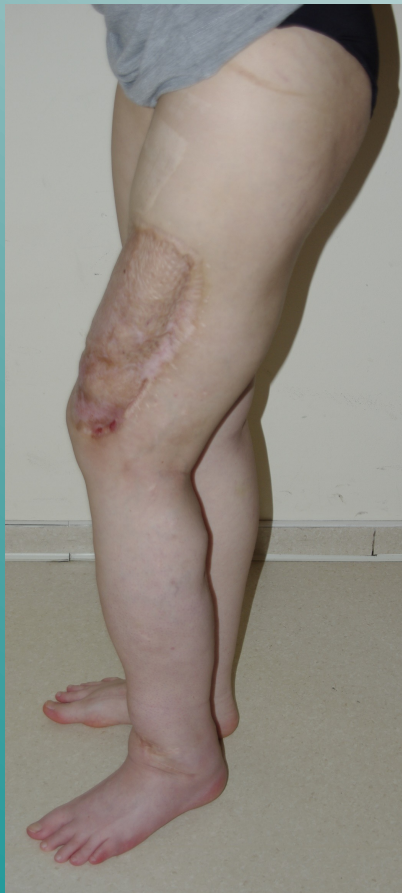
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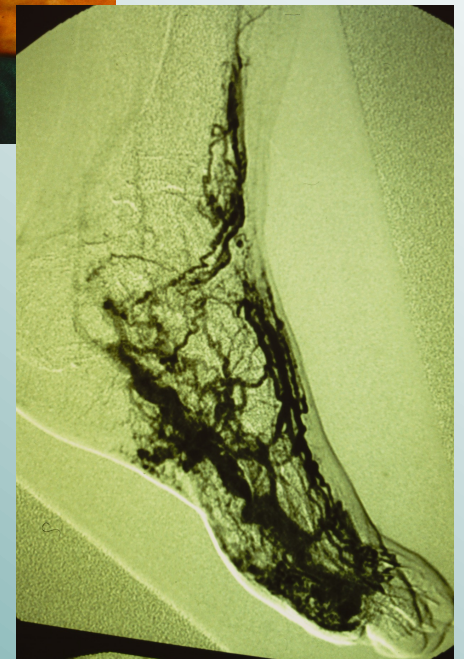
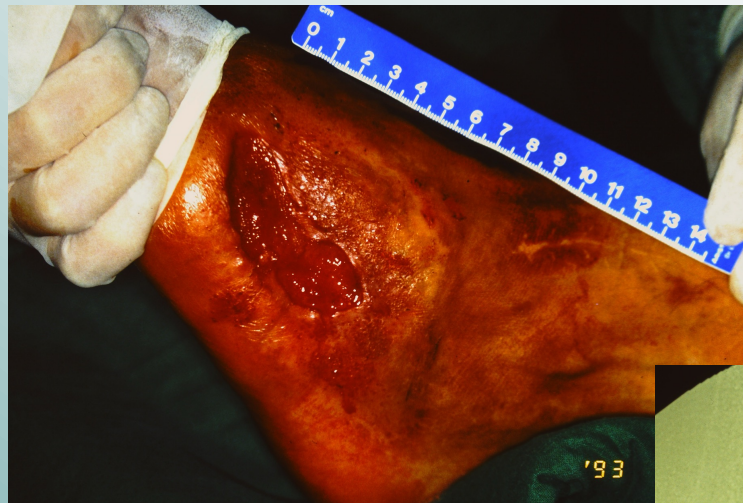
**disregard of the
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documents of treatment
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Wrong decisions by unexperienced doctor or/and ignorance of correct interventional techniques led to a life threatening “resection” elsewhere of a distended AVM of the left thigh.

5 years after that „resective“ surgery elsewhere, persistency of AVM.



Wrong decisions by unexperienced doctor or/and ignorance of correct interventional techniques. During 1950-1980 in several centers Cobalt radiation techniques were adopted for treatment of vascular malformations.



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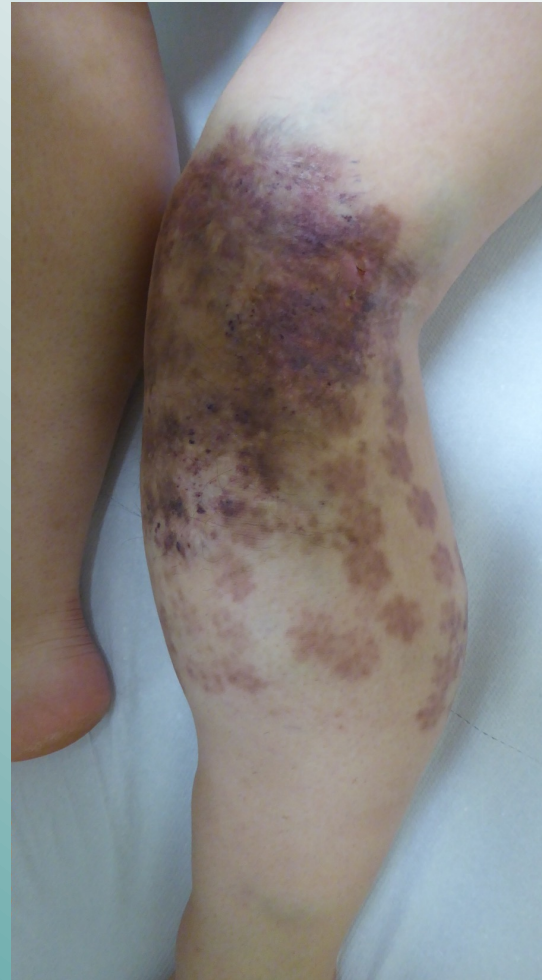
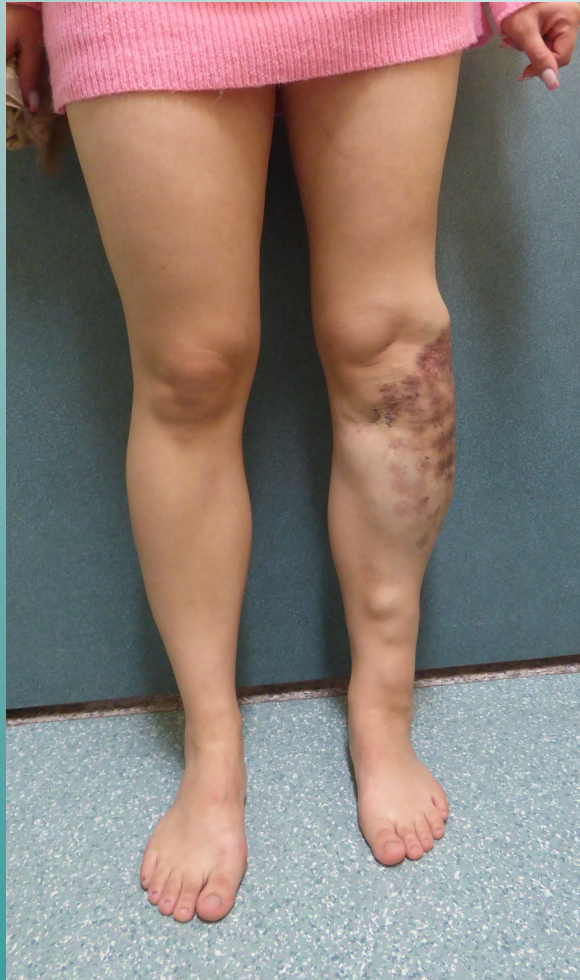
**disregard of the
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Underestimation of the degree of difficulty in the interventional therapy (wrong self-assessment), especially in growing AVMs



Underestimation of the degree of difficulty in the invasive therapy (wrong self-assessment)

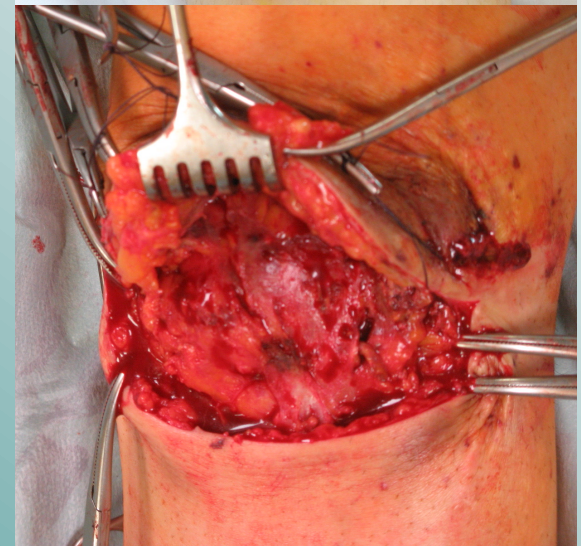
Situation after several sessions of Bleomycin sclerotherapy elsewhere without reduction of the malformation, but evoking worsening and continuous heavy severe pain.



Underestimation of the degree of difficulty in the invasive therapy (wrong self-assessment):

Sclerotreatment elsewhere led to septic complications and fore-foot-amputation...

...and later on after another sclerotreatment elsewhere, septic complications at the knee joint occurred.



wrong treatment

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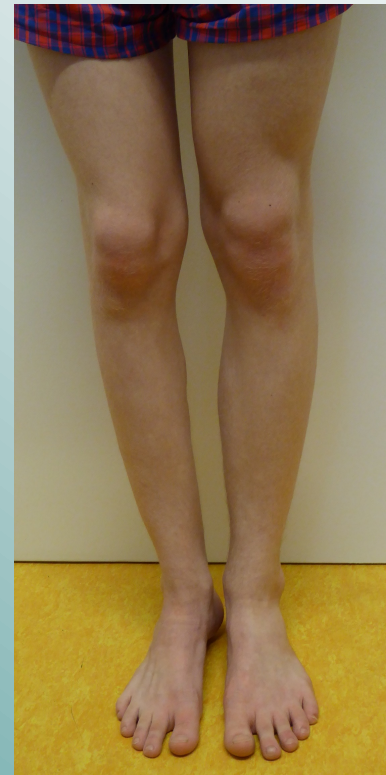
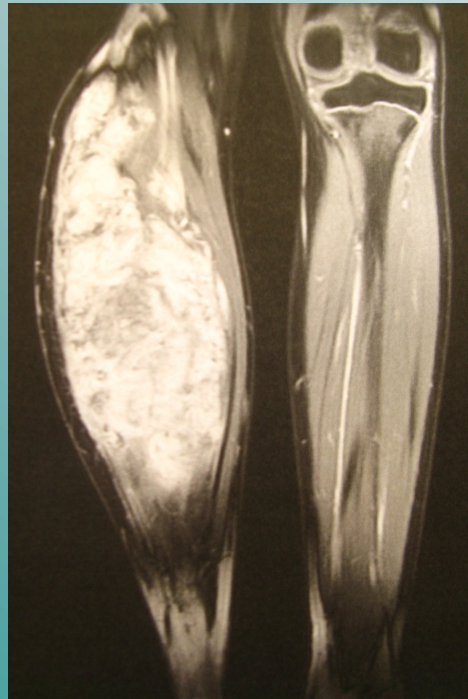
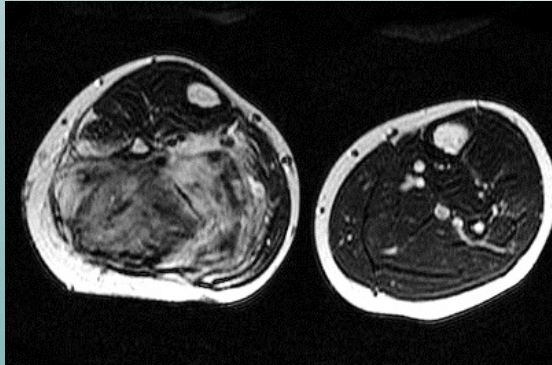
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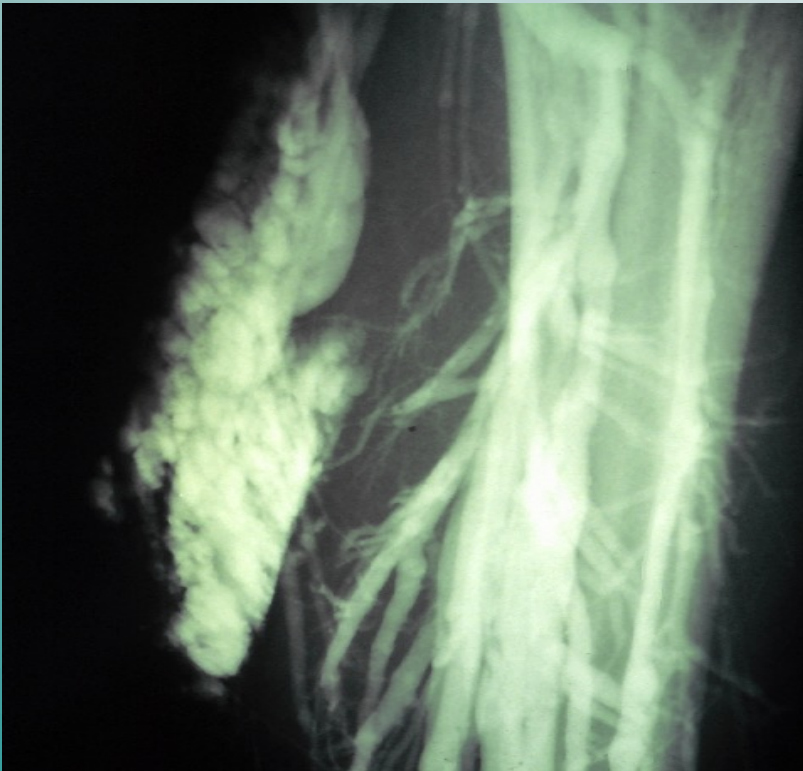
Disregard of the International Consensus documents of treatment (2009-2014):

No indication for sclerotherapy; Histology: angioliipoma



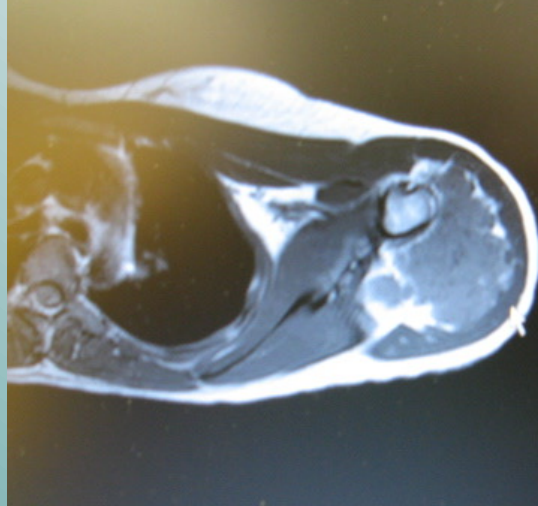
Disregard of the International Consensus documents of treatment (2009-2014):

No indication for **sole** sclerotreatment. Specimen with dilated venous structures.



Disregard of the International Consensus documents of treatment (2009-2014):

After insufficient biopsy elsewhere, neither sole sclerotreatment nor partial resection of a venous malformation but **total extirpation** is mandatory.



Disregard of the International Consensus documents of treatment (2009-2014):

Congenital or acquired venous aneurysms must be treated at an early stage because the risk of pulmonary embolism nearly always is very high.

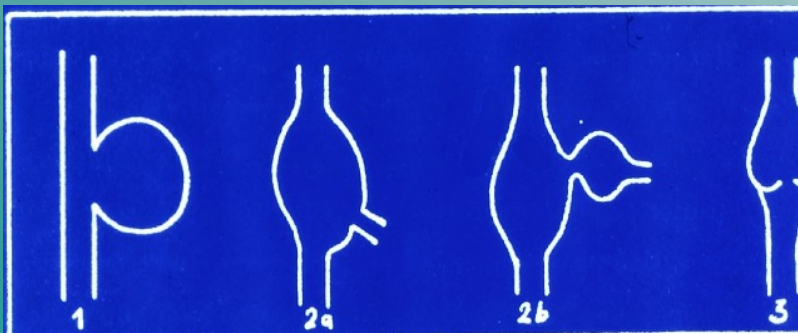
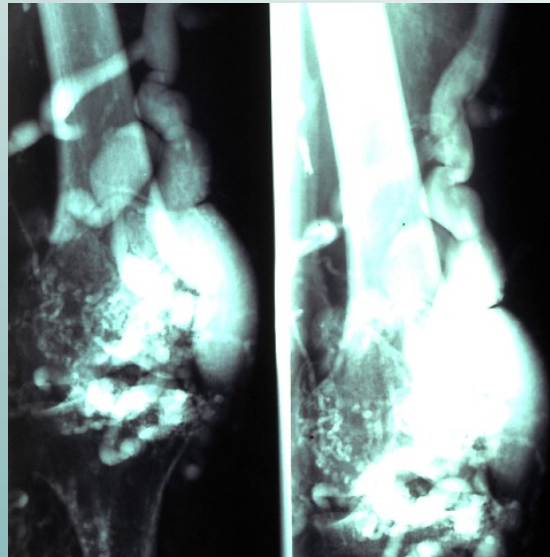
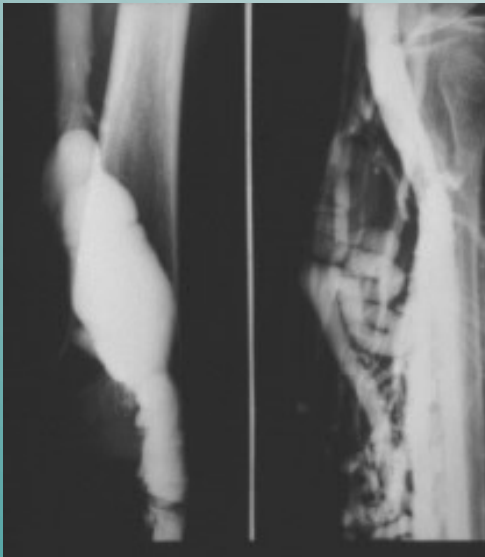


Abb. 1: Formen des venösen Aneurysmas nach BENNETT

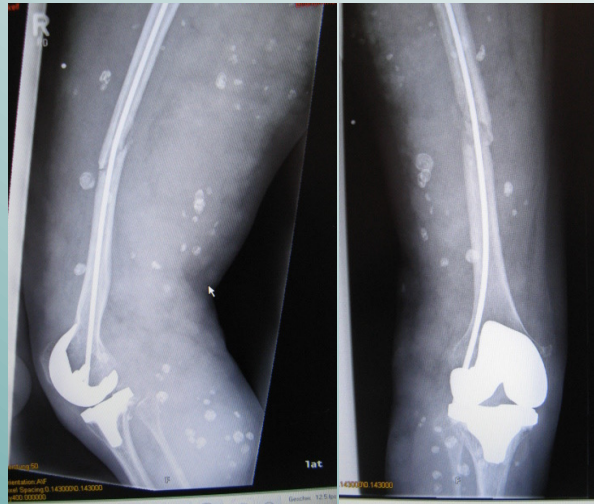
Disregard of the International Consensus documents of treatment (2009-2014):

The history of these stepwise amputations of a distended AVM started with surgery of a **small fingertip-necrosis**, performed by a plastic surgeon elsewhere. An early consequent stepwise interventional treatment may have prevented such a fatal development. - **The care for such patients should be an obligation for the doctor.**



Disregard of the International Consensus documents of treatment (2009-2014):

Close cooperation between orthopaedic surgeons, trauma surgeons and specialized physicians for the treatment of congenital vascular malformations **is imperative**, especially in this case, where severe congenital coagulation disorders were well known.



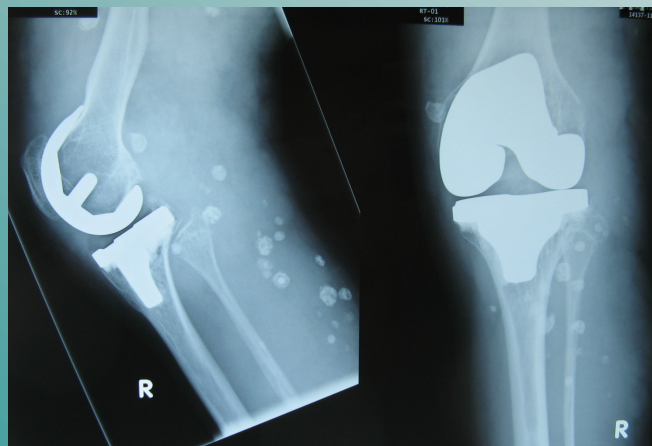
first fracture treated correctly with ESIN



second fracture



interlocking nail (wrong indication in this case)



- Communication between individuals and centers can mutually advance the cumulative experience and knowledge of the endovascular specialists in each.
- When collaboration between centers and individuals occurs and experience is shared, knowledge advances, success rates increase and complication rates decrease, all to benefit our only object: our patients (Yakes et al. 2019).

**In order to see clearly, it is often enough
to change the direction of view!**



Thank you for your attention!