UNIVERSITÄTSKLINIKUM
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Necrosis after sclerotherapy - Nicolau syndrome (phenomenon) after sclerotherapy

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Disclosures
Speaker: Birgit Kahle

- During the last three years I got reimbursements for travelling, to conferences,talks and organizing of scientific meetings from:

- Fa Aspen Pharma, Germany
- Fa Bauerfeind Phlebologie, Zeulenroda, Germany
- Chemische Fabrik Kreussler & Co GmbH, Wiesbaden, Germany
- Fa Julius Zorn GmbH, Aichach Germany,
- Fa ofa, Bamberg, Germany
- Fa medi GmbH& Co KG, Bayreuth, Germany
- Fa Sigvaris, Winterthur, Switzerland

- Nicolau syndrome (*synonyms*: Livedo-like dermatitis, Embolia cutis medicamentosa) is an iatrogenic syndrome initially described to occur after intramuscular injections.

Nicolau Syndrome

- Nicolau syndrome or embolia cutis medicamentosa was first described by Juliusberg, Freudenthal and Nicolau in early half of nineteenth century.

- They described ischemic necrosis of the skin, soft tissue, and muscular tissue in patients who had received intramuscular injections of Bismuth salt for the treatment of syphilis.

Freudenthal W (1924) lokales embolisches Bismogenol-Exanthem. Arch Dermatol Syph 147: 155-160

Nicolau S (1925) Dermite livédoide et gangréneuse de la fesse, consécutive aux injections intra-musculaires, dans la syphilis. Ann mal vénér 20:321–339

Juliusberg F (1928). Nebenwirkungen der Wismuthbehandlung. In: Handbuch der Haut und Geschlechtskrankheiten, Bd XIII. Jadassohn J (Hrsg). Berlin: Springer 1928;479-82.

- The typical clinical presentation is pain around the injection site soon after injection, followed by erythema, livedoid patch, hemorrhagic patch, and finally necrosis of skin, subcutaneous fat, and muscle tissue.

- Nicolau syndrome has been reported after intramuscular, subcutaneous, intravenous and intra-articular injections

Kwang-Kyoun K, Dong-Sik Ch. Nicolau syndrome: A literature review. World J Dermatol 2015;4: 103-107

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- rare cutaneous adverse reaction after intramuscular or intraarticular injection of various drugs.

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- rare cutaneous adverse reaction after intramuscular or intraarticular injection of various drugs.

- (Bismuth)
- **NSAIDS** (mainly Diclofenac), etancercpt, pethidine, antibacterial agents, chlorpheniramine maleate, corticosteroids, vitamin, sulphonamide, lidocaine, phenobarbital, chlorpromazine, thiocolchicoside and vaccines

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What about Sclerotherapy? Intravenous injection of sclerosants

- rare cutaneous adverse re scular or intraarticular injection of various drugs.

- (Bism
- **NS** Diclofenac), etancercpt, pethidine, antibacterial agents, chl amine maleate, corticosteroids, vitamin, sulphonamide, lidocaine, phen barbital, chlorpromazine, thiocolchicoside and vaccines

European guidelines for sclerotherapy in chronic venous disordersPhlebology 2013 Apr 4. (Epub ahead of print) PubMed PMID: 23559590

Complications and risks:

- Embolia cutis medicamentosa is very rare (< 0,01%)

Skin necrosis and embolia cutis medicamentosa following sclerotherapy

- have been described after paravenous injection of sclerosants in higher concentration and rarely after properly performed intravenous injection of low concentrated sclerosants[1]

1. **Goldman MP, Sadick NS, Weiss RA. Cutaneous Necrosis, Telangiectatic Matting and Hyperpigmentation following Sclerotherapy. Dermatol Surg 1995; 21: 19-29**

Skin necrosis and embolia cutis medicamentosa following sclerotherapy

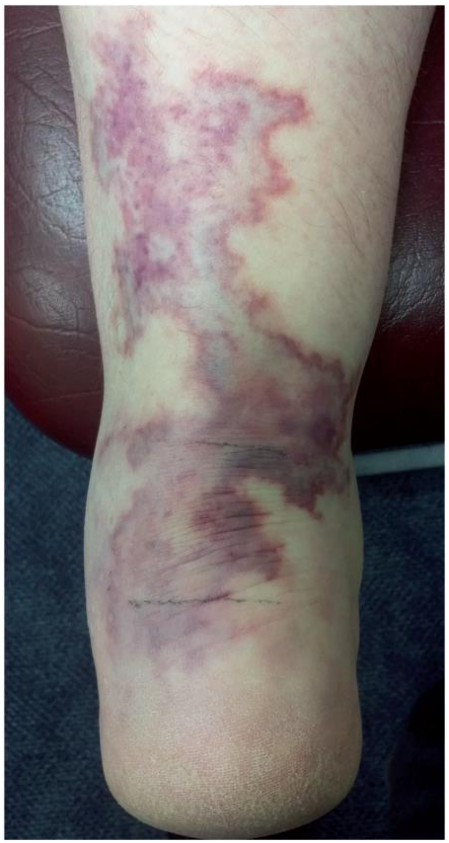
- have been described after paravenous injection of sclerosants in higher concentration and rarely after properly performed intravenous injection of low concentrated sclerosants[1]

- but:

- Paravenous subcutaneous injection of Polidocanol in different concentrations, foam or liquid, did not cause skin necrosis[2]

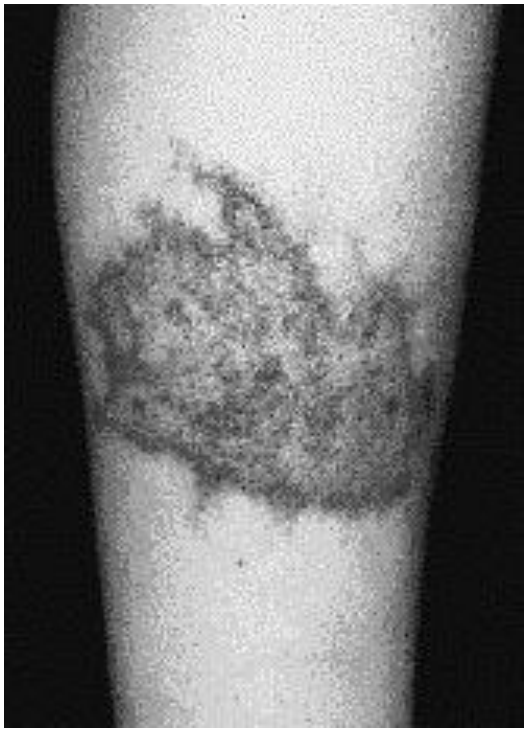
1. **Goldman MP, Sadick NS, Weiss RA. Cutaneous Necrosis, Telangiectatic Matting and Hyperpigmentation following Sclerotherapy. Dermatol Surg 1995; 21: 19-29**
2. **Schuller-Petrović S; Brunner F; Neuhold N; Pavlović MD; Wölkart G. Subcutaneousinjection of liquid and foamed polidocanol: extravasation is not responsible for skin necrosis during reticular and spider vein sclerotherapy. JEADV 2011; 25: 983-986**

Humphries D. Embolia cutis medicamentosa after polidocanol injection of neovessels in Achilles tendinosis. Grand Rounds 2013 ;Vol 13 pages 12–16



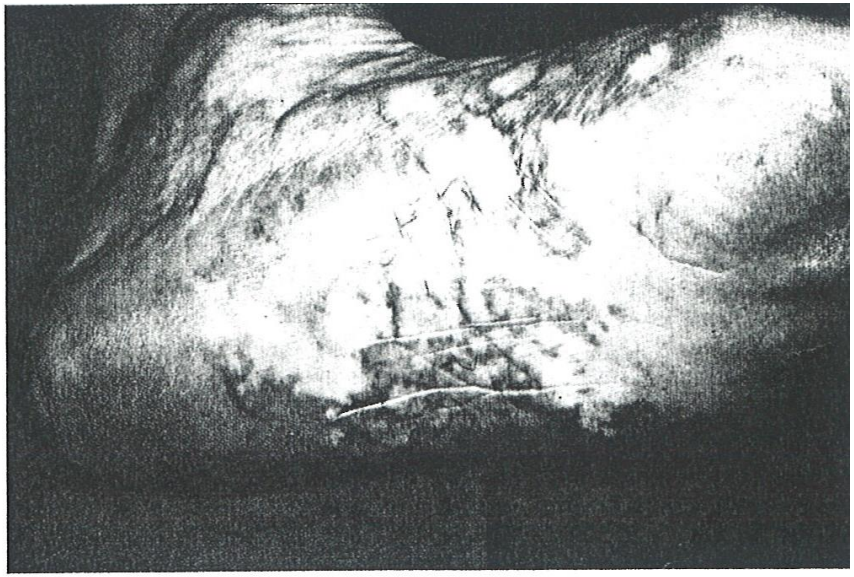
- The injection was performed under ultrasound guidance
- The neovessels on the anterior surface of the body of the tendon were injected with 2ml of 1% polidocanol solution.
- Severe pain during injection
- Healing was completed within 6 weeks

Kerstin E et al Embolia cutis medicamentosa nach Varizensklerosierung mit Polidocanol. Phlebologie 1998; 27: 55–7



- Tributary (C1) with 0.5% Polidocanol

Geukens J, Rabe E Embolia cutis medicamentosa of the foot after sclerotherapy. Eur J Dermatol 1999;132-3



- Intracutaneous veins (C1) in the ankle
- 1% Pol
- Alprostadil intravenous, Heparin, Pentoxyphyllin

Pathophysiology

The exact pathophysiology of this rare condition is still unknown.
however
many hypotheses have been proposed:

- Vasospasm secondary to needle prick,
- ➢ embolization of the injected material, or
- mechanical pressure exerted by the material placed around the vessel.

Three factors have been proposed to play a significant role in the pathogenesis:

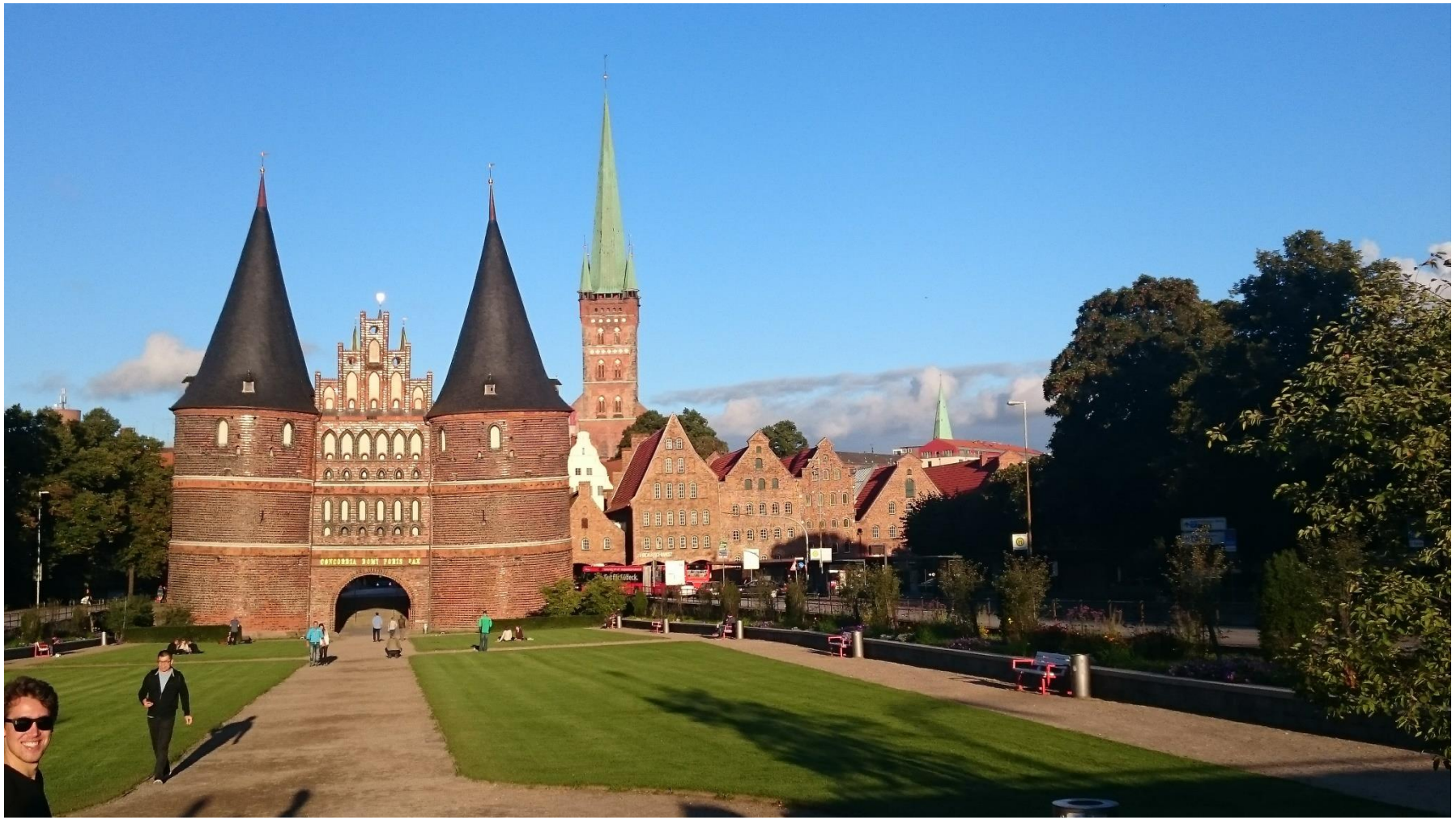
- Embolism,
- Angiospasm and
- Thrombosis.

- there are no standard management protocols for the treatment of this rare clinical syndrome

- Treatment is supportive and consists of standard wound care

European guidelines for sclerotherapy in chronic venous disordersPhlebology 2013 Apr 4. (Epub ahead of print) PubMed PMID: 23559590

- Recommendation 7:To reduce the risk of skin necrosis we recommend to avoid high-volume injections. The sclerosant should be injected with minimal pressure (GRADE 1C)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