

Figure 1 Eczematous eruption lateral to the healed incision of total knee replacement surgery.

SKINTED is an acronym for 'surgery of the knee, injury to the infrapatellar branch of the saphenous nerve and traumatic eczematous dermatitis'. The paper explained that the infrapatellar branch of the saphenous nerve is often resected during TKR using a median parapatellar incision.<sup>1</sup> We posited that this trauma to the nerve led to eczematous dermatitis by disruption of the neurocutaneous network in and around the incision site.<sup>1</sup> Later we came across the introduction of the concept of immunocompromised districts (ICD) by Ruocco et al.<sup>2</sup> published in the same year as SKINTED.

Since its introduction in 2009, there have been several review articles and case reports reiterating the concept of ICDs, with numerous examples. It is intended to be a unifying concept and describes a locoregional altered immunity (dysimmunity) most commonly due to chronic microscopic or macroscopic lymphatic stasis, healed herpetic infections, a wide range of trauma types, including surgical scars, radiation, burns, vaccinations and amputations, and a number of causes as disparate as paralytic stroke and poliomyelitis in an otherwise immunocompetent individual.<sup>2,3</sup> This sectorial immune dysregulation in an ICD is said to be due to locally dysfunctional lymphatic drainage, affecting transportation of immunocompetent cells, damage to sensory nerves that release immunity-related peptides and are responsible for neurotransmitter signalling to cell membranes of immunocom-petent cells, or both.<sup>2,3</sup> The ICD is thus vulnerable by its propensity to develop a secondary disease at the site, such as infections, dysimmune reactions and tumours.

We propose that SKINTED, which involves trauma to nerves as well as regional lymphatics, is a classic example of an ICD. The dermatology literature includes many names describing similar, if not the same, phenomena. The most recent term, introduced as recently as in 2017, is autonomic denervation dermatitis (ADD).<sup>4</sup> The authors

tried to differentiate it from 'SKINTED', 'neuropathy dermatitis' and 'post-traumatic eczema'; however, all these conditions essentially describe surgical incision scars with secondary development of eczematous eruptions on the site and its vicinity.4,5

I respectfully submit that attempting to add new terms describing a surgical incision site with secondary eczema into the dermatology lexicon without explaining the underlying concept of ICD appears to be a futile exercise. Additionally, it is prudent to try to minimize the semantic maze that we are unwittingly constructing and getting lost in. We feel that in such situations, when scientifically and semantically tenable concepts are available, it is more practical to 'lump rather than split'.

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## References

- 1 Verma SB, Mody BS. Explaining a hitherto nameless condition: 'SKINTED'. Clin Exp Dermatol 2009; 34: e465-6.
- 2 Ruocco V, Brunetti G, Puca RV, Ruocco E. The immunocompromised district: a unifying concept for lymphoedematous, herpes-infected and otherwise damaged sites. I Eur Acad Dermatol Venereol 2009: 23: 1364-73.
- 3 Ruocco V, Ruocco E, Piccolo V et al. The immunocompromised district in dermatology: a unifying pathogenic view of the regional immune dysregulation. Clin Dermatol 2014: 32: 569-76.
- 4 Madke B, Mhatre M, Kumar P et al. Autonomic denervation dermatitis: a new type of eczematous dermatitis. Clin Dermatol Rev 2017; 1: 61-4.
- 5 Verma SB. What's in a name? Surgical incision sites are potential immunocompromised districts. Int I Dermatol 2019. https://doi.org/10.111/ijd.14621

## Compositions of injectable poly-D,L-lactic acid and injectable poly-L-lactic acid

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Injectable poly-L-lactic acid (PLLA) was first available in Europe in 1999. In 2004, it was approved by the US Food and Drug Administration (FDA) for facial filling of patients with lipoatrophy resulting from human immunodeficiency virus, under the name of Sculptra (Dermik Laboratories, Bridgewater, NJ, USA), and in 2009, the use of injectable PLLA was further expanded to facial cosmetic application.<sup>1</sup> Injectable poly-D,L-lactic acid (PDLLA) is a new subdermal filler (Aesthe Fill; REGEN Biotech, Inc., Seoul, South Korea), which was first approved by the Korean FDA in  $2014.^2$ 

Clinical trials of injectable PDLLA were performed in Korea by Hyun *et al.*, and the study was published in *Clinical and Experimental Dermatology* under the title 'Efficacy and safety of injection with poly-L-lactic acid compared with hyaluronic acid for correction of nasolabial fold: a randomized, evaluator-blinded, comparative study'.<sup>3</sup> This study provides us with valuable information that injectable PDLLA is safe and has noninferior efficacy compared with hyaluronic acid 6 months after being used to treat moderate to severe nasolabial folds. However, there was an inaccuracy in this article, with 'poly-L-lactic acid' used instead of the accurate 'poly-D,L-lactic acid'.

Lactic acid is a natural product of starch fermentation. and can also be produced by chemical synthesis. Poly-lactic acid (PLA) is synthesized by direct polycondensation of lactic acid or by ring-opening polymerization of the lactide dimer. Because of the chiral character of lactic acid, there are two enantiomers: L- and D-lactic acids. These two enantiomers can produce four distinct PLA substances: poly-p-lactic acid (PDLA), PLLA, PDLLA and meso-PLA. As PDLLA and PLLA both belong to the PLA group, both are endowed with the biocompatible, biodegradable and biostimulatory properties of PLA. However, some differences between PDLLA and PLLA exist. PLLA is hemicrystalline and has a regular chain structure, whereas PDLLA is amorphous and has an irregular chain with random distribution of L- and D-lactic acids. The glass transition temperature, melting temperature and tensile strength of PDLLA are all lower than those of PLLA, and the degradation time of PDLLA is faster than that of PLLA.4,5

Injectable PLLA is supplied as a lyophilized powder. A vial of injectable PLLA contains 150 mg of PLLA microparticles. 90 mg of carboxymethyl cellulose (CMC) and 127.5 mg of nonpyrogenic mannitol. The PLLA microparticles are solid, irregular in shape, and between 40 and 63 µm in diameter.<sup>1</sup> Injectable PDLLA is also supplied as a lyophilized powder. A vial of injectable PDLLA contains 154 mg of PDLLA microparticles and 46 mg of CMC. The PDLLA microparticles are spherical in shape with multiple pores on the surface, and have a diameter of 30–70  $\mu m.^2$  The microparticle size of both PDLLA and PLLA make them small enough to pass through an injection needle, but large enough to protect them from phagocytosis. Both injectable PDLLA and PLLA must be reconstituted with sterile water before injection. The component CMC in both products plays an important role in reconstitution.

In conclusion, the two products are both biocompatible, biodegradable and biostimulatory, but there are some differences in composition between injectable PDLLA and injectable PLLA.

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# References

- 1 Fitzgerald R, Bass LM, Goldberg DJ *et al.* Physiochemical characteristics of poly-L-lactic acid (PLLA). *Aesthet Surg J* 2018; **38**: s13–17.
- 2 Lin CY, Lin JY, Yang DY *et al.* Efficacy and safety of poly-D,L-lactic acid microspheres as subdermal fillers in animals. *Plast Aesthet Res* 2019; **6**: 16.
- 3 Hyun MY, Lee Y, No YA *et al.* Efficacy and safety of injection with poly-L-lactic acid compared with hyaluronic acid for correction of nasolabial fold: a randomized, evaluator-blinded, comparative study. *Clin Exp Dermatol* 2015; **40**: 129–35.
- 4 Farah S, Anderson DG, Langer R. Physical and mechanical properties of PLA, and their functions in widespread applications – a comprehensive review. *Adv Drug Deliv Rev* 2016; **107**: 367–92.
- 5 Murariu M, Dubois P. PLA composites: from production to properties. *Adv Drug Deliv Rev* 2016; **107**: 17–46.

# Optimizing preconception care in patients on biologics: MMR vaccination status

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Psoriasis is a common disorder that can occur at any age, but the majority of cases occur before 45 years of age. We are increasingly seeing women of childbearing age in our systemic medication clinics. The recent British Association of Dermatologists guidelines on biologics address issues pertinent to treatment of women during pregnancy<sup>1</sup> but there is no reference to preconception advice with regard to the measles–mumps–rubella (MMR) vaccination.

Rubella is generally a mild disease caused by a togavirus. Its most serious effects are on the foetus, and prevention of the congenital rubella syndrome (CRS) is the main aim of rubella vaccination. Maternal rubella infection in pregnancy may result in foetal loss or major defects affecting almost all organ systems. The overall risk of CRS depends on the stage of pregnancy. If a pregnant woman gets rubella in early pregnancy, 9 in 10 babies will have a major birth defect, such as deafness, blindness, brain damage or heart defects. Some manifestations may be delayed for up to 4 years. Worldwide, over 100 000 babies are born with CRS every year.<sup>2</sup> The MMR vaccine is the vaccine recommended by the UK and