

**Discussion****Prognosis of Full Thickness Skin Defects in Preterm Infants**

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The authors have written a prognosis of full-thickness skin defects in premature infants. The authors begin by dressing 14 cases of full-thickness skin defects due to extravasation of total parenteral nutrition. The authors described the dressing method, wound healing, and final scar. The timing of extravasation was 14 to 50 days after birth, and the gestational ages at birth ranged from 28 weeks and 4 days to 35 weeks and 6 days. This is the earliest clinical study of a premature infant wound healing process. Fetal wound healing is characterized by minimal inflammation and scarless repair. Premature infants are not completely the same fetuses, but premature infants in the early period after birth undoubtedly have characteristics in common with fetuses and, most relevantly to the present discussion, can heal without scarring.

Despite some important differences, the authors stress that intensive wound management for moisturization and reduction of an inflammatory response could help in the successful treatment of skin defects and lead to scarless repair. The biological phenomenon of scarless wound healing in the fetal period is not the same during the whole gestational period, but it would be the same in the postfetal wound healing process [1]. There is a developmentally regulated threshold for scarless healing based on both gestational age and the extent of injury [2]. The late-gestation fetus has been proven to heal with fibrosis and scarring [3]. Wound size also affects the degree of scarless repair [4]. This transition phenomenon has also been demonstrated in fetal sheep [5], rodents [6], and monkeys [7]. No one has been able to determine which factors have more influence on a final scar, and further studies are needed.

It seems as we understand more about scarless repair, we understand how much more we need to learn about the process. In the future, however, advances in technology might help us elucidate the mechanisms behind the wound healing process. More extensive research must be conducted to further define the integral process and the unknown aspects of fetal and scarless

wound healing. It can be argued that well-intentioned clinicians, researchers, biologists, technicians, and industry personnel need to come together to better identify other mechanisms and principles in this rapidly developing subfield.

It is well known that human fetal wound healing research is practically impossible to conduct due to the bioethical issues. A premature infant is in a transitional stage between the fetus and adult stage, and thus has characteristics of both of them. From the prospective view, the wound healing process of premature infants could serve as a good surrogate for a scarless adult wound healing model.

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