

Lumbar tattoos, magnetic resonance imaging, and obstetric anesthesia: what do they have in common?

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To the editor: Tattoos—ancient forms of permanent body ornamentation—have today become popular fashion accessories worldwide [1,2]. More than 50% of all tattoos are being done on women. In recent years, body tattooing at unconventional sites (e.g., the lumbar and/or sacral area, and the lower abdomen) has gained increasing popularity among young women (including pregnant women). Vasold et al. [2] reported that the colorants used in tattoos—industrial pigments, which have never been intended, and have never been produced by the chemical industry to be used in humans for ornamental purposes (but, rather to color consumer goods), may contain hazardous (toxic and/or carcinogenic) compounds. Wagle and Smith [3] first reported on magnetic resonance imaging (MRI)-induced skin burns caused by permanent coloring techniques (tattooing), in a 23-year-old man who sustained a second-degree skin burn in two skin tattoos while undergoing diagnostic cervical spine MRI studies. It is believed that extremely dark tattoo ink contains a high concentration of iron oxide, and this ferrous pigment can become quite concentrated if sedimented ink is used during the tattoo process. Iron oxide is both potentially magnetic and an electrical conductor; therefore, the heating during MRI could raise intracellular water temperature in the skin, resulting in a burn [3].

MRI studies can reveal subtle differences between areas of dissimilar anatomy, and provide excellent soft-tissue contrast; these studies are widely popular for the diagnosis of a number of intraabdominal conditions [4]. MRI does not produce ionizing radiation, is noninvasive, and does not, by itself, cause any biologically deleterious effects.

Placenta accreta is an abnormal adherence of the placenta to the uterine wall owing to an absent or faulty decidua basalis [5]. Although rare, the diagnosis of placenta accreta may lead to life-threatening complications (e.g., fatal hemorrhage). His-

torically, placenta accreta was an incidental finding at the time of delivery and was associated with high maternal morbidity and mortality. The development of new imaging techniques such as MRI and transvaginal color Doppler sonography has allowed antenatal diagnosis of this condition [6] and elective preoperative planning of the obstetric and anesthetic management of these patients (e.g., elective Cesarean hysterectomy) [5].

In his practice of obstetric anesthesia, the author of this report encountered an otherwise healthy parturient with a working diagnosis of placenta accreta and colorful lumbar tattoos who was scheduled for MRI studies to determine the extent of placental pathology. At the conclusion of the procedure, the patient reported burning pain in her tattoos, consistent with the absorption of radiofrequency energy in the pigmented skin area. Although (luckily) no burns were diagnosed, this case adds one more piece of evidence that MRI studies should be performed with caution in patients with permanent skin coloring (tattoos).

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