Commentary on: Complications After Facial Injections With Permanent Fillers: Important Limitations and Considerations of MRI Evaluation

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In “Complications After Facial Injections With Permanent Fillers: Important Limitations and Considerations of MRI Evaluation,” the authors propose the use of magnetic resonance imaging (MRI) as an investigative tool in the assessment of delayed-onset complications subsequent to injections of permanent fillers. Utilization of this investigative imaging tool is proposed to be helpful in assessing filler-related complications where it is difficult to clinically assess the nature and extent of the complication. The study included 32 patients who underwent a pretreatment MRI evaluation of post–facial filler injection complications. After 13 of 120 site-specific assessments were excluded due to poor image quality, a total of 107 site-specific clinicoradiologic evaluations were obtained. Clinicoradiologic level of agreement was assessed as strong for depots without complications and noninflammatory nodules (85%), as moderate for abscesses (60%), as fair for low-grade inflammations (32%), and as slight for migrations (9%). In 14% of the cases, results from pretreatment MRI were helpful in the treatment decision making.

I commend the authors for undertaking this study to evaluate the role of MRI in the treatment of post–permanent filler complications. Such studies do have a role in patient care, but to what extent and at which point in time? Diagnostic studies—based on MRI, computed tomography, high-frequency ultrasound, even scanning electron microscopy—may be utilized for evaluation of post–filler injection complications but only to supplement the treatment plan based on a thorough history and clinical assessment of the patient. The critical issue is whether the high cost of these studies is justified by the information gained. In what percentage of post–filler injection complications is the treatment course altered by the diagnostic study? In addition, from the medicolegal aspect, does “standard of care” necessitate inclusion of a diagnostic test, or may it be based on patient history and clinical assessment alone?

As reported by Lowe et al., the overall rate of post–filler injection complications is very low; for example, granuloma rate is 0.01% to 0.1%. The cohort evaluated in this study is a unique subset of filler patients that has a much higher propensity to develop postinjection complications and is not representative of the “general” filler population. In 30 of 32 patients, a highly (4%) cross-linked polyalkylimide gel was injected. As discussed by Lorenc, the postinjection complication rate of nonabsorbable hydrosil polymers is directly related to the degree of cross-linking; therefore, a high complication rate is expected in this cohort. In 14 of 32 patients of the study population, treatment indications were that of combination antiretroviral therapy–induced facial lipoatrophy, where a routinely large volume of filler material is injected during multiple visits. As reported by Nadarajah et al., the incidence of postpolyalkylimide 4% cross-linked gel injections in patients with HIV-related facial lipoatrophy (large-volume injections) is 19%, significantly different from and higher than that observed where a routinely small volume of material is injected. Because of the study group’s several unique characteristics, applying conclusions reached from this cohort to the general filler population may be unfounded.

In the article, the authors categorize filler depots into 4 categories: depots without inflammation, depots with inflammation, depots with abscess formation, and depots with migration in relation to documented placement. In practice, a clinically significant abscess is easily identified by the classic signs of abscess formation (pain, erythema,
edema, inflammation, and loss of function) and routinely treated on the basis of clinical symptoms alone. Migration depots, if symptomatic, are either noninflammatory (nodules) or inflammatory (granulomas). In a recent series of articles, Vleggaar et al.\textsuperscript{5} described in detail the etiology, histology, clinical manifestation, and treatment of these 2 distinct classes of post–filler injection depot complications. Clinically, nodules are typically palpable, well defined, asymptomatic, and nonvisible; they arise several weeks after injection, do not grow in size, and frequently become resorbed with time. Depots with inflammation (granulomas) clinically manifest themselves 6 to 24 months after injection, have poorly defined borders, are symptomatic, grow in size with duration, and respond well to intraleisonal steroid/antimetabolite injections, as demonstrated in Table 1 in 2 articles by Lemperle et al.\textsuperscript{6,7} Histologically, nodules have an overabundance of injected material, surrounded by a normal foreign body reaction with the presence of foreign body giant cells. In contrast, a granuloma contains a small amount of filler material incased in an extensive and prolific host reaction containing “wall-to-wall” foreign body giant cells. Granulomas are histologically distinct for the accumulation of epithelioid cells, a type of modified macrophage.\textsuperscript{5} Treatment of these post–filler injections complications is routinely based on a thorough history and a complete physical examination.

With recent drastic changes in health care delivery, the expense of diagnostic tests has become an important issue. The cost must be justified by the information gained from the data obtained. To be warranted, it has to have enough of an impact on the treatment decision making. Even in this select (ie, more prone to complications) group, MRI-obtained data aided in treatment decision making in only 14% of the depots evaluated. Even though the authors do provide an outline of how an MRI study may be a useful pretreatment diagnostic tool for post–filler injection complications, I believe that such a relatively costly diagnostic tool should be reserved for only unique or rare postinjection complications that are either recurrent in nature or nonresponsive to the “standard of care” treatment that is based on a thorough patient history and a complete physical examination.

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**REFERENCES**


