Injection Site Lipoatrophy: A Rare Complication of Recombinant Human Insulin

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Fig. 1 and Fig. 2: Lipoatrophy over the left para-umbilical region.

A 59-year-old male with type 2 diabetes of 19 years duration had been treated with premixed recombinant human insulin (30% regular and 70% NPH) for the last 18 months. He was injecting himself predominantly over the left side of the abdomen. He developed subcutaneous lipoatrophy around the injection site about 14 months after the induction of insulin therapy (Fig. 1 and Fig. 2). Skin biopsy of the involved site documented adipocyte atrophy along with features of chronic inflammation.

Lipodystrophy (lipoatrophy and lipohypertrophy) was the most frequently reported local complication of insulin therapy in the past with the use of animal insulins. The immunological reaction to the insulin product seems to be involved in the etiopathogenesis of lipoatrophy. This immune complex-mediated inflammatory lesion, however, has become a rare event since the advent of highly purified human recombinant insulins. There are very few documentations of such association in world literature. Insulin-induced lipoatrophy not only produces a cosmetic problem, it is relevant from the therapeutic aspect as well, because of the variability of drug absorption it causes from the site of injection.

Lipoatrophy although rare can still occur even with the use of technologically advanced newer insulin preparations like insulin lispro,1 biphasic insulin aspart,2 insulin glargine and insulin detemir.3 The estimated prevalence of this complication is about 3.6%. This complication of insulin therapy may be limited by regularly inspecting the injection sites and changing the type of insulin and injection site eventually relieves the fat atrophy.

References


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