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Case Report

ULCERATING BUTTOCK GRANULOMA, A COMPLICATION OF LIQUID SILICONE INJECTION; CASE REPORT

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A B S T R A C T

Ulcerating granuloma secondary to injection of liquid silicon for aesthetic reasons is an uncommon complication, we are reporting a case of a 52 years old lady who developed a stubborn ulceration in her buttocks for over nine years along with periaortic lymphadenopathy following injection of liquid silicon in her buttocks for aesthetic reason. We reviewed the literature for the mode of action of this type of cosmesis and its complication.

INTRODUCTION

Injectable liquid Silicon has been used over six decades for aesthetic reason with up to over 90%success [1]. We came across one of its horror complication which had a massive physical and mental impact on our patient. We are reporting this 52 year old lady who received a form of impure liquid silicon injection for augmenting her buttock, and it ended up with ulcerating granulomatous lesion in both buttocks. We reviewed the literature for previous similar cases, and found that ulcerating granuloma with retroperitoneal lymphadenopathy secondary to Silicon injection is very rare. It was stressed that in order to avoid complication, the material used should be of the purest medical form, the volume given should be titrated and the frequency of the injections should not exceed once per month.

CASE REPORT

A 52 years old lady was referred to us from the accident and emergency department because of bilateral buttock ulcers with evidence of cellulitis. This lady received silicone oil injection about nine years ago for buttock augmentation. Apparently it was not a pure form of silicone oil, since it was injected in a beauty salonrather than in a hospital or a clinic. Her symptoms started few months after the injection with pain in the both buttocks which culminated in development of ulcers.

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with antibiotics and dressing. She lost around eighteen Kilos unintentionally in the past few months. Her past medical history apart from three episodes of deep vein thrombosis and history of Caesarian section was unremarkable. The patient was admitted and culture swab grew E coli, Pseudomonas, ESBL and MRSA, accordingly she was treated with Tazocin then ciprofloxacin. Her abdominal CT scan revealed soft tissue surrounding the Aorta and the Iliacs in concordance with retroperitoneal calcified lymphadenopathy (fig 1 and 2).

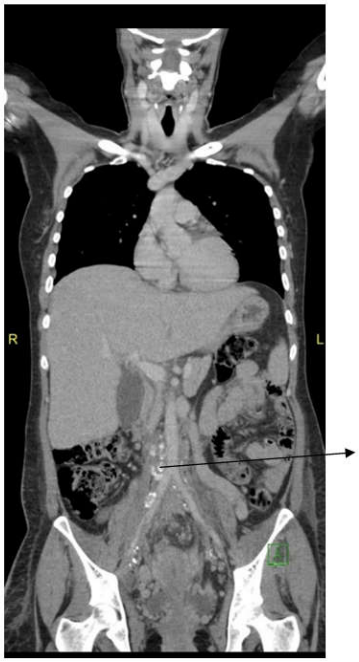

Fig 1

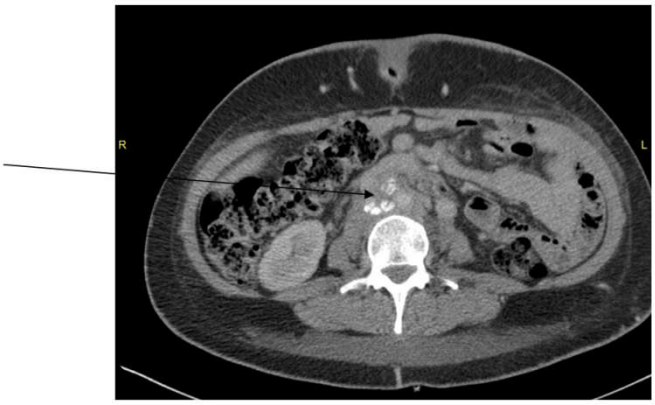

Fig 2

Fig 1 and 2 Coronal and Sagittal section CT showing para aortic calcified lymph nodes (arrow).

Biopsy from the indurated skin revealed infiltration of the dermis and the subcutaneous tissue with aggregates of mononuclear inflammatory cells including numerous plasma cells along with foamy macrophages, occasional foreign body type and Touton's giant cells, along with numerous variable size vacuoles and cystic spaces (fig 3). Few retractile hyaline eosinophilic globules consistent with liquid silicon droplet were also seen (fig 4).

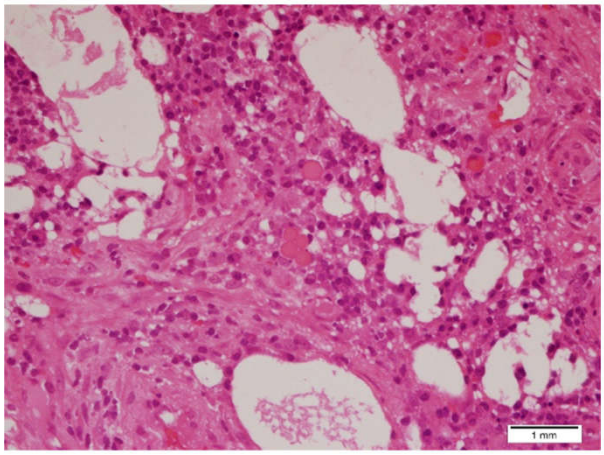

Fig 3

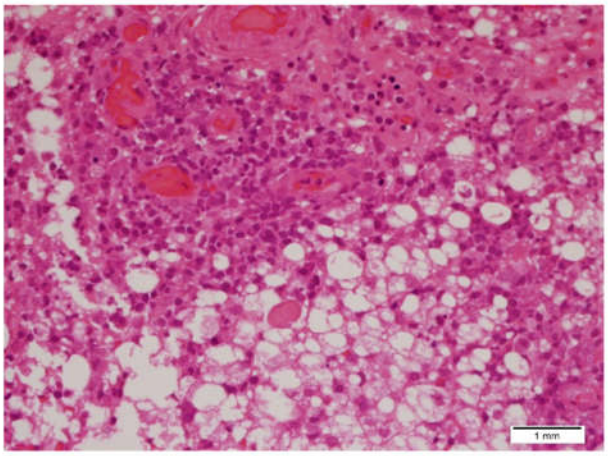

Fig 4

Fig 3 and 4 Sections reveal infiltration of dermis and subcutaneous tissue by aggregates of mononuclear inflammatory cells including numerous plasma cells, along with foamy macrophages, occasional foreign body type and Touton's giant cells, numerous variable sized vacuoles and cystic spaces [fig.3] Retractile hyaline eosinophilic globules consistent with liquid silicone droplets are also rarely noted. Figure [fig.4].

Debridement was done for the necrotic parts, and Plastic Surgeons were not enthusiastic for aggressive intervention due to the unhealthy tissues.

DISCUSSION

Liquid Silicon Injection for soft tissue augmentation started in 1940 in Europe and Japan before spreading in the US by the fifties [1,2]. Initially it was used mainly for intraocular tamponading of complex retinal detachment, Nowadays, it is used mainly for augmenting secondary sexual characters [3] enhancing facial features, used commonly by exotic entertainers and transgendered and trans sexual individuals. Though liquid injectable Silicon (LIS) has been used successfully for over fifty years, we decided to report this complication which was disastrous to the patient, who is suffering from chronic pain and buttock ulcers for the past nine years, along with abdominal pain from her retroperitoneal lymphadenopathy. The purity of LIS is variable, industrial silicon is different since it is non sterile an impure [4]. Injecting lower degree of purity or large volume at once [1,5] will participate in the occurrence of the complication like granulomatous reaction and risk of tracking along tissue planes as in our case , to more distant body sites in a matter similar to rupture of breast implants [6].

Our patient most likely had a low class purified LIS, injected in large volumes over a short period interval, leading to tracking along the tissue planes to the retroperitoneal space ending up with her retroperitoneal lymphadenopathy.

The principal theory behind the action of LIS is that following weeks of injection, fibrosis occur and a collagenous capsule is created around the microdroplet [1]. This result in containment and prevention of migration to other tissue sites, and increased surface area of multiple microdroplet result in increased total volume of collagen deposition [1]. This process is completed by week 12 usually, however, the side effect any grade of LIS included pain at the injection site [2,7] erythema , ecchymosis and edema, overcorrection, hypersensitivity , inflammatory and non-inflammatory nodules including foreign body granuloma, vascular compression and thrombosis. "Silicon Syndrome"on the other hand is a systemic silicon embolism consisting of dyspnea, fever, cough, hemoptysis, chest pain, hypoxia, alveolar hemorrhage and altered consciousness [3]. Migration can lead to adenopathy, lymphedema, systemic embolism, organ damage and even death. The microscopic appearance are of giant cells histiocytes containing cytoplasmic vacuoles giving picture of Swiss cheese appearance [2,6]. The presence of Silicon within the granuloma can be established using different spetroscopies, however the presence of Silicon in the granuloma does not attest to the purity of the Silicon [2].

There are many theories around the formation of the granuloma, among which is reactivation of bacterial biofilms formed around the injected material, and transformation of Silicon to Silica, which is irritant. Even in the pure medical grade, Silicon causes foreign body reaction [5,3]. Fibrinogen in the dermis adsorb to the Silicon exposing two previously hidden epitopes. The newly exposed epitopes can induce an inflammatory response which attracts neutrophils and macrophages and leads to the development of cutaneous granulomatous ulceration[7] , which is seen in our case, and this is a rare phenomenon and is attributed to the impaired

local blood supply which predisposes to venous stasis, hence pressure ulcers in the buttock.

The management of these granuloma include surgical excision, mainly the symptomatic ones, since removal of all injected Silicon is impossible. [5]. Other modalities include long term antibiotics, steroids, both oral and intra-lesional [7,8], non-steroidalant inflammatory drugs such as celecoxib [5]. Immuno modulator like TNF inhibitor such as infliximab and etanecept [4,5,3] has been used with successful results. The latter is a human fusion protein which binds to the TNF and blocks its interaction with cell surface receptors rendering it biologically inactive [4]. Some authors advise radical debridement with split thickness skin graft [6].

Complication can be avoided by

- Use only pure medical grade of Silicon
- Use serial microdroplet puncture technique
- Inject limited volume at monthly or longer intervals. [3]

The reputation of the medical grade has been damaged because of the following:

1. Use of large quantities leading to deformation
2. Possibility of gravity induced migration in patient with very lax skin.
3. Possibility of late granuloma (siliconoma)
4. Substitution of cheaper non-medical grade silicon
5. Lack of experience.

Acknowledgement

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