Dystrophic Calcinosis Cutis Successfully Treated with Extracorporeal Shockwave Lithotripsy

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Introduction:
• Calcinosis cutis (CC) is a chronic condition whereby deposits of calcium salts accumulate in the skin and subcutaneous tissues[1].
• Dystrophic calcinosis cutis is typically seen in association with connective tissue disease including scleroderma and dermatomyositis.
• Up to 40% of patients with limited systemic sclerosis will develop calcinosis cutis within 10 years of diagnosis[2].
• Up to 30% of adults and 70% of children or adolescents with dermatomyositis will also develop calcinosis cutis[3].
• It is a debilitating condition associated with significant morbidity, often presenting with intractable pain or persistent ulceration. Intramuscular calcium deposits can cause muscle atrophy and joint contractures, further limiting mobility.
• Guidelines are lacking, treatment is challenging and outcomes are often disappointing.

Case Summary:
We present the case of a 72 year old woman with a history of limited scleroderma who presented with a 2 year history of a painful, linear plaque involving the volar aspect of her left forearm[4]. This was associated with significant pain and ulceration, and superimposed infection was frequent. The clinical diagnosis of calcinosis cutis was confirmed radiologically, with MRI showing a 12cm calcium deposit on the ulnar aspect of the forearm[5-8].

Treatment with Rifampacin and Clindamycin was initiated for its anti-inflammatory effects, with disappointing results and progression of ulceration despite treatment. Further treatment courses trialled included tetralysal, diltiazem and an oral bisphosphonate, which all resulted in minimal clinical improvement.

In consultation with our urology colleagues we commenced treatment with extracorporeal shockwave lithotripsy (ESWL). Our patient was treated with 1200 shockwave ESWL on three occasions. This resulted in fragmentation of extracorporeal shockwave lithotripsy (ESWL). Our patient was treated with ESWL is an accepted treatment in urology, having been used for 40 years in the treatment of nephrolithiasis. More recently ESWL has shown promise in the treatment of CC, both to dismantle calcium deposits and as an analgesic adjunct[9].

Discussion
Dystrophic CC secondary to connective tissue disease typically develops due to recurrent trauma in the dermis, resulting in collagen injury and calcium deposition[2]. Given the rarity of this condition, randomised controlled trials and treatment guidelines are lacking. Treatment is challenging and outcomes are often disappointing. The aim of treatment is typically to limit morbidity and disability for patients, as complete resolution of calcium deposits can be difficult to achieve[3].

Initial treatment is often with an oral agent used for its anti-inflammatory or calcium-binding properties, such as minocycline, diltiazem or colchicine[4]. Bisphosphonates are also used to obliterate macrophages in calcium deposits, thereby inhibiting downstream cytokine activation[4]. Intraleisonal treatments with corticosteroids and sodium thiosulphate have also been trialled, though their role is limited in the treatment of more extensive deposits[5]. Surgical excision or debulking has also been used as a treatment for CC, however it is important to consider the risk of poor wound healing and persistent ulceration prior to selecting this approach[6]. An increasing number of case reports and case series have documented success in using extracorporeal shockwave lithotripsy (ESWL) in the treatment of CC, both to dismantle calcium deposits and as an analgesic adjunct[7].

ESWL is an accepted treatment in urology, having been used for 40 years in the treatment of nephrolithiasis. More recently ESWL has shown promise in the treatment of a wide range of conditions including pancreaticolithiasis, sialolithiasis and calcified tendonitis. The underlying mechanism in ESWL involves employing high energy acoustic waves from an electrical source. The shock waves are transmitted to the skin where energy is released due to the change in density. The resulting reverberation causes fragmentation of the calcium deposit[8]. Its application to dermatology is in its infancy. However, it has been shown in other specialties to be a safe, non-invasive treatment.

Clinical Progress:

References