SunKrist Publishing
Accelerate Scientific Knowledge in Open Access

SunKrist Clinical and Medical Case Reports Journal

Case Presentation *Volume: 2, Issue: 1* *Scientific Knowledge*

ReadiGraft BLX Putty and ReadiGraft Bone Chips in the Treatment of Severe Osteoarthropathy in Hemodialysed Patient

Giampietro Bertasi*

Department of Biotechnology, University of Padua, Italy

1. Abstract

Osteoarticular complications are a major concern in patients treated with long-term hemodialysis, hemofiltration or continuous ambulatory peritoneal dialysis. Uremic chronic patients, treated for long periods of time (≥15 years) with hemodialysis, could develop a new kind of osteoarthropathy due to amyloidosis characterized by abnormal distribution of beta-2 microglobulin (B2M) in joint tissue. Deposits of B2M are responsible for several lesions, clinically evident in different pathologies, such as: carpal tunnel syndrome, spondylarthrosis, and hemodialysis osteoarthropathy.

2. Introduction

The pathogenesis of dialysis arthropathy, although still unknown, is probably multifactorial. A group of associated factors, including duration of dialysis, type of dialysis membrane, patient's age, effects of hyperparathyroidism on the skeletal system, presence of apatite crystals, and an aluminum and iron overload may play a role [1-6]. In this case study, radiological evidence of articular complications is apparent in hips with massive infiltration of amyloid deposits. Immuno-peroxidase studies revealed the presence on intracellular hemosiderin [7-8]. Allografts are able to restore bone stock and facilitate fusion in the treatment of joint-sparing articular repair [9]. In this case, ReadiGraft cortical/cancellous bone chips and ReadiGraft BLX Putty, a demineralized bone matrix (Lifenet Health, Virginia Beach, Virginia, USA), were used to fill the defect and encourage bone healing [9].

3. Case Presentation

Patient

42 years old male with uremic chronic disease since the age of 20.

Figure 1: Pre-operative X-Ray.

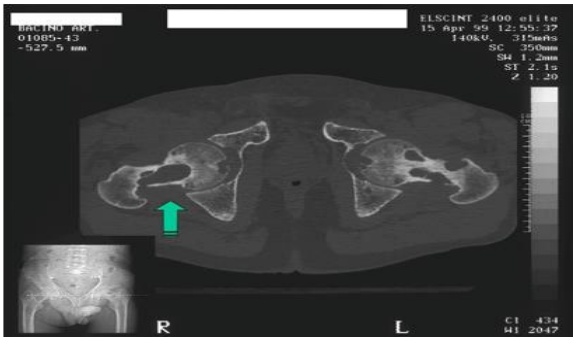

Figure 2: Pre-operative MRI.

***Corresponding author:** Giampietro Bertasi, Department of Biotechnology, University of Padua, Via Molino 4337029 San Pietro in Cariano, Italy, Tel: +30 345 600 1037; E-mail: bertasi.g@sis.it

Received Date: April 17, 2020; **Accepted Date:** April 20, 2020; **Published Date:** April 22, 2020

parathyroidectomy and subsequent implant in the 10 years ago, the patient had a subtotal forearm.

Within years he developed unstable hyperparathyroidism. Total excision of the implant was completed.

4. Diagnosis

Patient presented with radiological evidence of articular complications in both hips with massive infiltration of amyloid deposits.

Immuno-peroxidase studies revealed the presence on intracellular hemosiderin. Parathyroid hormone was normal (34.8pg/ml at the time of hospitalization).

5. Treatment

On the right hip a "cylinder carrot" done with a trephine was filled with ReadiGraft cortical/cancellous chips and ReadiGraft® BLX Putty. A cancellous screw was fixed to the femur head to save the hip joint.

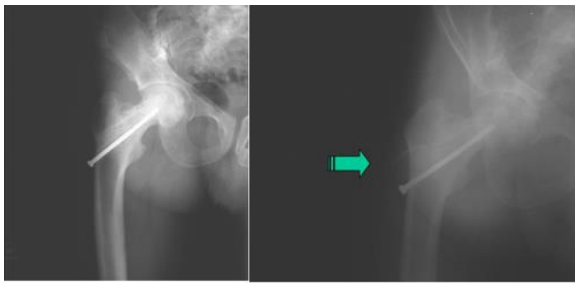

Figure 3: Right hip 15 months post-operation.

6. Outcome

The patient was satisfied with the surgery.

References

1. Van Ypersele de Strihou C, M Jadoul, Malghem J, Maldague B, Jamart J. Effect of Dialysis Membrane and Patient's Age on Signs of Dialysis-Related Amyloidosis. The Working Party on Dialysis Amyloidosis. Kidney Int. 1991; 39: 1012-1019.
2. Aoyagi R, Miura Y, Ishiyama T, Maruyama Y, Hasegawa H. Influence of Dialysis Membranes on the Development of Dialysis Associated Osteoarthropathy. Kidney Int Suppl. 1993; 4: 111-115.
3. Bordoni E, Gaffi G, Mioli V. Carpal Tunnel Syndrome in Hemodialyzed Patients. Int J Artif Organs. 1989; 12: 811-812.
4. Suzuki S, Sato H, Inomata A, Maruyama H, Ueno M, Gejyo F, et al. Immunohistological Localization of Beta-2-Microglobulin in Renal Tissue as an Indicator of Renal Dysfunction. Nephron. 1992; 60: 181-186.
5. Vandenbroucke JM, Jadoul M, Maldague B, Huaux JP, Noël H, van Ypersele de Strihou C. Possible Role of Dialysis Membrane Characteristics in Amyloid Osteoarthropathy. Lancet. 1986; 1: 1210-1211.
6. J Munoz-Gomez, P Estrada-Laza. Early Radiologic Manifestations of Destructive Spondylarthropathy in Hemodialyzed Patients. Arthritis Rheum. 1986; 29: 1171-1172.
7. K Ohashi, Hara M, Kawai R, Ogura Y, Honda K, Nihei H, et al. Cervical Discs Are Most Susceptible to Beta 2-Microglobulin Amyloid Deposition in the Vertebral Column. Kidney Int. 1992; 41: 1646-1652.
8. Kessler M, Netter P, Grignon B, Bertheau JM, Aymard B, Azoulay E, et al. Destructive Beta 2-Microglobulin Amyloid Arthropathy of the Cervico-Occipital Hinge in a Hemodialyzed Patient. Arthritis Rheum. 1990; 33: 602-604.
9. Gruskin E, Doll BA, Futrell FW, Schmitz JP, Hollinger JO. Demineralized bone matrix in bone repair: History and use. Adv Drug Deliv Rev. 2012; 64: 1063-1077.

Citation: Giampietro Bertasi. ReadiGraft BLX Putty and ReadiGraft Bone Chips in the Treatment of Severe Osteoarthropathy in Hemodialysed Patient. SunKrist Clin Med Case Rep J. 2020; 2: 1005.