

◆ Abstract

- Osteoarthritis is characterized by the degeneration of the extracellular matrix resulting in loss of articular cartilage.
- Regenerative medicine involves delivering amniotic stem cells to diseased tissues or organs, where they will promote native cellular regeneration and restore tissue growth via paracrine signaling mechanisms.
- We present a 65 y/o F with bilateral knee pain consistent with stage 3 osteoarthritis not responsive to conservative measures
- On 10/22/20, bilateral knee amniotic stem cell injections were performed. Her WOMAC score was a baseline of 28.
- On 11/20/20 her WOMAC score was 14, a 50% reduction from baseline.

◆ Introduction

- Osteoarthritis of the knee is the most common form of arthritis that causes pain, stiffness, and decreased function, as well as being one of the leading causes of disability among noninstitutionalized adults [1].
- Regenerative medicine involves delivering amniotic stem cells to diseased tissues or organs, where they are thought to promote native cellular regeneration.
- Via paracrine signaling mechanisms. Amniotic stem cells provide the correct growth factors to essentially modulate the ideal environment for natural regeneration to take place. These include epidermal growth factor, platelet-derived growth factor, transforming growth factor-beta 1, VEGF, b-FGF, and ANG-2 [2].
- Previous studies on patients with osteoarthritis and focal chondral defects treated with intra-articular mesenchymal stem cell therapy have shown significant improvement without any major adverse events [3].
- Studies assessing the safety and efficacy of intra-articular injection of autologous adipose tissue-derived MSCs for knee osteoarthritis have demonstrated that intra-articular injection of MSCs into the osteoarthritic knee improved function and pain of the knee joint without causing adverse events. Radiological, arthroscopic, and histological measures consistently demonstrated a decrease of articular cartilage defects by regeneration of hyaline-like articular cartilage [4].

◆ Case History

- We present a case of a 65-year-old female with chronic debilitating bilateral knee pain over the last five years.
- She was found to have stage 3 osteoarthritis that was not responsive to a 6-month period of conservative measures including PT, rest, and OTC .
- Initially, intraarticular steroid injections were tried but it caused a significant increase in her daily glucose levels.
- This was followed by a trial of Synvisc injections into both knees which only gave her moderate short-term relief.
- Given that her imaging was consistent with moderate and not severe OA, she was presumed to still have the ability to regenerate, thus making her an excellent candidate for stem-cell directed regeneration therapy over that of surgical intervention.

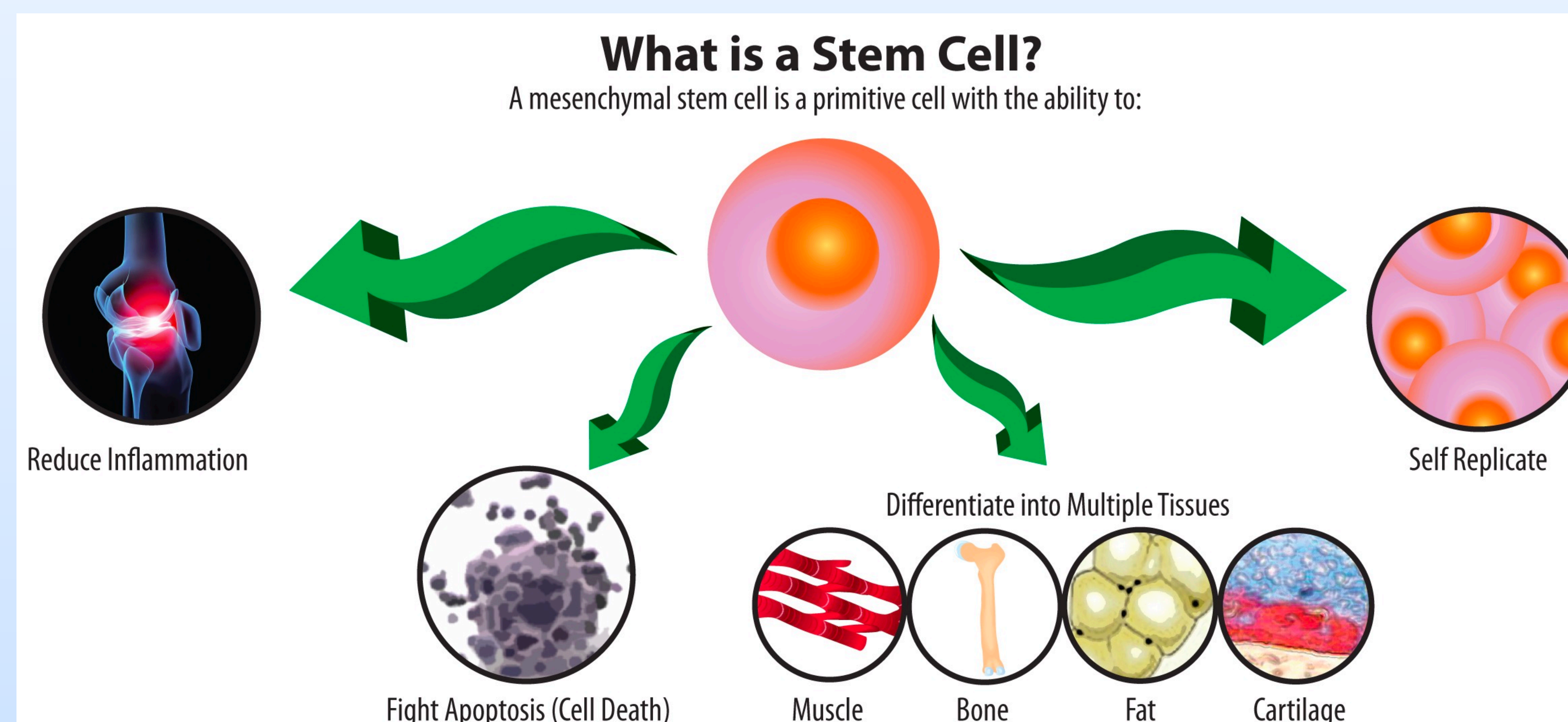
◆ Results

10/22/20

- Pain was reported at 8/10.
- WOMAC score was a baseline of 28.
- Bilateral knee amniotic stem cell injections were performed.
- Instructed to avoid NSAIDS, steroids, and ice for eight weeks, as this could impede the regenerative process process.

11/20/20

- Pain was reported to be a 0/10.
- Reported significant improvement in performing her everyday activities.
- No change in sugars and no side effects were noted.
- WOMAC score was 14, a 50% reduction from baseline.



◆ Discussion

- Targeting the correct growth factors has been the focus of newer advances in treatment as even just recently, new amniotic stem cells have been FDA approved and currently being reimbursed by Medicare.
- Current treatment for osteoarthritis is built on the more than 50 different modalities of pharmacological, nonpharmacological, and surgical treatments. However, the current and most common treatments for moderate osteoarthritis have at best modest albeit clinically relevant effects and can endanger substantial adverse events or costs, or both [6].

◆ Conclusion

- Now that regenerative therapy is more economically accessible to qualified patients, this case illustrates the further consideration into stem-cell directed therapy being a novel, safe, and affordable treatment in the future management of patients with osteoarthritis.

◆ References

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