Physical Therapy Management of Low Back Pain in a Young Female with Ankylosing Spondylitis Associated with HLA-B27 Antigen: A Case Report

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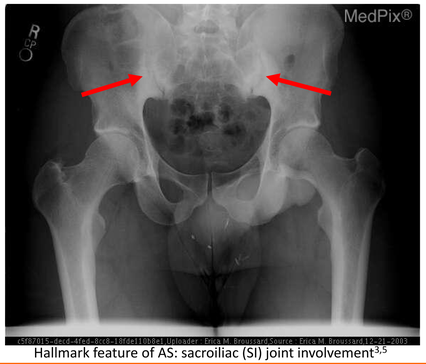
Background

Ankylosing spondylitis (AS): form of arthritis characterized by chronic inflammation of the axial skeletal system that causes back pain and loss of mobility with strong potential for slow, eventual spinal fusion[1]
- Affects 0.2-0.5% of the United States population
- No known cure, yet greater than 60 genetic components are involved[1]

HLA-B27: genetic component highly correlated with AS. Presence creates inflammatory response at bony attachment sites of tendons, ligaments, and joint capsules.[2]

Presentation can vary widely and may include:
- Intermittent and/or significant back pain and stiffness across multiple body segments for long periods of time[3]
- Peripheral joint involvement
- Chronic inflammatory-related comorbidities[4]

Purpose: Describe a comprehensive approach for physical therapy (PT) management of AS to assist clinical decision reasoning and clinical decision making and enhance care management in this patient population.

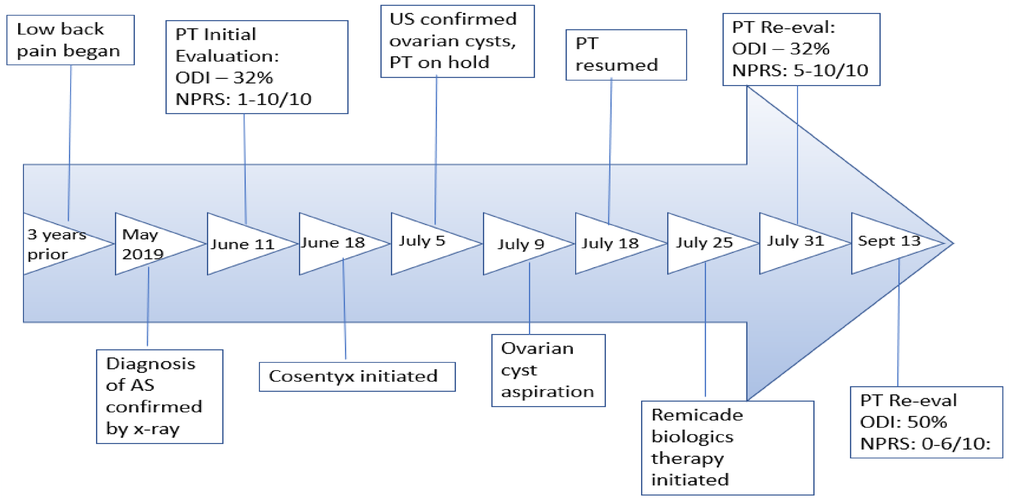


Hallmark feature of AS: sacroiliac (SI) joint involvement[3,5]

Patient Presentation

- 27-year old female patient services representative referred to outpatient therapy
- MRI confirmed medical diagnosis of AS
- Limited active range of motion (AROM): thoraco-lumbar flexion and extension, lumbar lateral flexion and rotation (pain with all)
- Limited strength: hip (all planes, pain), plantarflexors
- Neural assessment: parasthesia to left foot, occasionally to right knee
- Activities of daily living: independent, modified or limited activity when pain significantly increased
- Relieving factors: minimal relief with shifting positions, prescribed medication
- Goals: long term preservation of independent functional mobility, return to recreational activities, minimize need for pain medication

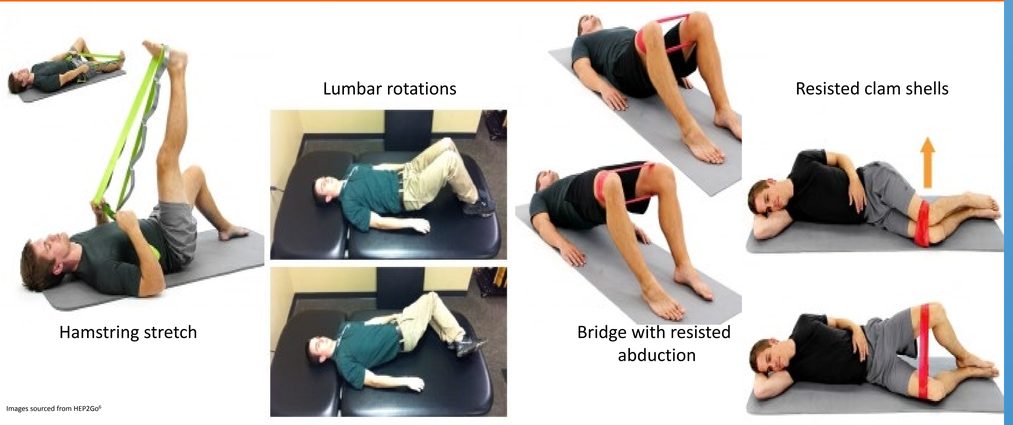
Timeline



Interventions

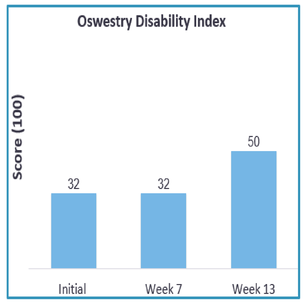
- **Soft Tissue Mobilization**
- **Therapeutic Exercise**
- Postural Re-education
- **Modalities**
- Neuromuscular Re-education
- Joint Mobilization

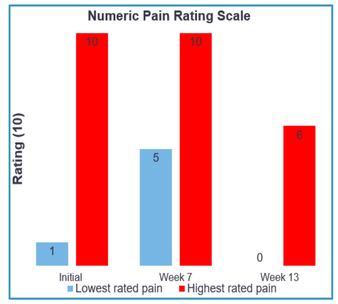
Home Exercise Program



Images sourced from HEP2Go[6]

Outcomes





	Initial	Week 7	Week 13
Lumbar AROM[a]	Flexion: 10cm[b]*	→ 11.5cm	→ WNL[c]
	Extension: 4cm*	→ 4.5cm*	→ WNL
	Left SB[d]: 14cm*	→ 14cm	→ 14cm
	Right SB: 7cm*	→ 13cm*	→ 14cm
SLR[e]	Left: 35°	→ 50°	→ 60°
	Right: 36°	→ 48°	→ 72°

Legend: a: AROM – active range of motion, b: cm – centimeters, c: WNL – within normal limits, d: SB – sidebend, e: SLR – straight leg raise, (*) denotes pain

Discussion

- Greatest improvement reported after initiation of Cosentyx and Remicade, immunosuppressant drugs utilized to decrease systemic inflammation[7,8]
- Soft tissue mobilization combined with interferential current therapy seemed to provide greatest pain relief during PT
- Goals seemed to provide little insight quantifying patient progress and condition

Limitations: limited evidence available regarding PT management of AS, publication of this case report prior to patient discharge from PT
Future research opportunities: clinical practice guideline, treatment guidelines for active vs. non-active AS

Take home point: This case demonstrated the evolving and ever-changing nature of AS. Collaborative care, pharmaceutical intervention, and patient-centered, symptom-focused intervention seemed to provide greatest benefit for this patient.

Acknowledgements, References, and Contact Information

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