Management of the Non-Operative Rib Fracture Patient

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Relevant Disclosures

William Tisol – Surgeon Educator DePuy/Synthes
Heidi Doerr - None
When a patient is referred to you for treatment of a rib fracture/chest wall pain and the patient is not a surgical candidate, the patient is referred to...

1. Pain Management
2. Physical Therapy
3. PCP
4. No referral
5. Other
Case 1

40 yo male s/p MVA 2/2015

- L anterior CW pain with radiation posteriorly
- Worse with activity
- Improved with hot/cold compresses
- Tried acetaminophen/hydrocodone, methocarbamol, NSAIDS – Limited success
- Seen in Clinic 8/2015 (6mo post injury)
- Tender over L CW mid-axillary line
Case 1

4th rib
5th rib
6th rib
Case 1

- PT treatment start: 8/2015
- Pain constant 3-10/10; missed work; limited motion, strength and use of LUE
- 3 Visits
- Treatments: Laser, stabilization tape, manual techniques
- Outcome: Pain 0/10, work without limitation or pain, no limitation in strength or ROM LUE, DASH 0 from 30
Case 2

52 yo female with known rib fracture 2011

• “Stabbing” pain under L breast radiating anterior and posterior
• Worse when sleeping
• Improved when upright
• Seen in clinic 6/2014 (~3yrs post injury)
• Tender under L breast
Case 2

2012

2014
Case 2

- PT treatment start 6/2014
- Pain 8-10/10, all activities painful, function at 30%
- 4 Visits
- Treatments: manual techniques, laser, exercise
- Outcome: 0/10 pain; golf 18 holes, drive and sleep without pain; DASH 12 from 43.3
Aurora Rib Fracture and Chest Wall Pain Program

Surgery

Physical Therapy

Pain Mgmt
Physical Therapy Program

2 Categories

1. Acute - trending to decrease pain and healing
   • Evaluation and instruction in HEP
2. Acute or Chronic - with findings indicating PT intervention
   • Evaluation and individualized program
   • Sessions usually set up 2X/week
Physical Therapy Modalities

Laser Therapy

- Laser and light emitting diodes generate infrared and low level red light energy
- Benefits include
  - Tissue repair
  - Inflammation reduction
  - Analgesia
Physical Therapy Modalities

Manual Therapy Techniques

• Joint Mobilization
• Strain-Counter Strain
• Soft Tissue Mobilization
• Myofascial Release
• Functional Massage
• Muscle Energy Techniques
Physical Therapy Modalities

Kinesiotape
- Swelling Reduction
- Stabilization

Therapeutic Exercise

Posture Education

Diaphragmatic Breathing Retraining
# PT Program Outcomes

36 pts evaluated and treated by PT 2014/15
- Includes only CW pain non-surgical patients
- Average # PT visits – 4.9
- Cost: most insurance plans cover PT, no denials

<table>
<thead>
<tr>
<th></th>
<th>Acute ≤6wks N=16</th>
<th>Chronic &gt;6wks N=20</th>
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<tbody>
<tr>
<td>Fracture N=19</td>
<td>13</td>
<td>6</td>
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<tr>
<td>No Fracture N=17</td>
<td>3</td>
<td>14</td>
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Program Outcomes – Non-Surgical

36 pts evaluated and treated by PT 2014/15

29 patients (80%) demonstrated improvement in pain/function

• Ave initial pain: 7.6, Ave DC pain: 2.2, Ave change 5.5
• Return to work, improved ADLs/IADLs, sleep w/o disruption, pain no longer stopping activity

5 patients (14%) demonstrated no improvement in pain/function

• 2 returned to Surgery for resection of callus with improvement of pain after surgery

2 patients (6%) lost to follow up after initial visit
Aurora Rib Fracture and Chest Wall Pain Program

Physical Therapy

Surgery

Pain Mgmt
Conclusion

• A rib fracture and chest wall pain program is a multidisciplinary endeavor
  • All patients evaluated by Surgery and PT
• Many patients being evaluated for management, both acute and chronic, may be non-operative
• Physical therapy plays a critical role in treatment
• Pain management should be reserved for patients who are non-operative and fail physical therapy
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