

Author Year Country Research Design Score Sample Size	Methods	Outcomes
Bonfield et al. (2010) USA Systematic Review AMSTAR=6 N=22 studies	<p>Objective: To determine the indications for surgical intervention and optimal surgical intervention technique for post-traumatic syringomyelia (PTS).</p> <p>Methods: Comprehensive literature search of English articles of all individuals with traumatic syrinx, excluding case reports.</p> <p>Databases: MEDLINE, EMBASE, Cochrane, Web of Science.</p> <p>Evidence: Levels of evidence were assigned using GRADE criteria (very low, low, moderate, or high). Clinical recommendations were made using a modified Delphi approach (weak or strong).</p>	<ol style="list-style-type: none"> 1. Strength of evidence was very low (n=16) to low (n=6). 2. Overall recommendations were weak. 3. The incidence of PTS was 0.5-4.5% and was twice as common in complete versus incomplete injury. 4. Surgical intervention for PTS was effective at arresting or improving motor deterioration, but not sensory dysfunction or pain syndromes. 5. Spinal cord untethering with expansile duraplasty was the preferred surgical technique. 6. Direct surgical decompression beyond realignment/stabilization of a thoracic complete SCI to reduce the risk of future PTS was not supported. 7. Surgical intervention for incidental, asymptomatic syrinx was not supported.
Falci et al. (2009) USA Case Series N=362	<p>Population: Mean age: 40.5 yr; Level of injury: C1-C6=163, C6-T1=83, T1-S5=116; Severity of injury: AIS A=232, AIS B=36, AIS C=41, AIS D=51, AIS E=2; Mean time since injury: 10.7 yr.</p> <p>Intervention: Participants who received cord untethering, expansion duraplasty, and cyst shunting for progressive myelopathy were retrospectively analyzed. Outcomes were assessed at pre-op, post-op, and follow-up.</p> <p>Outcome Measures: American Spinal Injury Association (ASIA) scores; Clinical status; Complications.</p>	<ol style="list-style-type: none"> 1. At post-op, participants showed significant increases in ASIA light touch score (n=308; +1.39, p=0.029) and pinprick score (n=307; +1.41, p=0.029), and a non-significant decrease in ASIA motor score (n=263; -0.32, p=0.059). 2. At 1 yr follow-up, participants showed non-significant changes in ASIA motor score (n=100; -.128, p=0.102), light touch score (n=110; +0.74, n=0.437), and pinprick score (n=109; +0.58, p=0.633). 3. At last follow-up, participants showed a significant decrease in ASIA motor score (n=134; -1.16, p=0.015) and non-significant changes in light touch score (n=157; -0.76, p=0.391) and pinprick score (n=157; +0.1, p=0.996). 4. Participants reported decreases in neuropathic pain (n=99; 47%), spasticity (n=53; 60%), and hyperhidrosis (n=38; 77%). 5. Participants reported arrest of progressive loss of both motor and sensory function (n=204; 89%), of motor function (n=152; 93%), and of sensory function (n=128; n=97%). 6. Complications were CSF leak/collection (3.8%), DVT/PE (2.35%), wound infection (0.48%), bacterial meningitis (0.48%), myocardial infarction (0.24%), and death (0.48%).
Falci et al. (1999) USA Case Series N=59	<p>Population: Mean age: 38 yr; Gender: males=49, females=10; Level of injury: C1-C6=24, C6-T1=20, T1-S5=15; Severity of injury: AIS A=53, AIS B=1, AIS C=3, AIS D=2; Mean time since injury: 12 yr.</p>	<ol style="list-style-type: none"> 1. Participants showed non-significant increases in ASIA scores when compared to pre-op (p>0.05): light touch (+0.67), pinprick (+1.3), and motor (+0.41). 2. Participants without previous surgery (n=34) showed increases in ASIA scores when compared to pre-op: pinprick (+3.88, p<0.05),

	<p>Intervention: Participants who received cord untethering and/or cyst shunting for progressive myelopathy were retrospectively analyzed at 1 yr post-op.</p> <p>Outcome Measures: American Spinal Injury Association (ASIA) scores; Clinical status; Complications.</p>	<p>light touch (+2.38, $p>.05$), and motor (+1.47, $p>.05$).</p> <p>3. Participants with previous surgery ($n=25$) showed non-significant decreases in ASIA scores when compared to pre-op ($p>.05$): light touch (-0.7), pinprick (-0.8), and motor (-0.5).</p> <p>4. Participants showed recovery of lost functional activity (64.3%), substantial improvement in spasticity (62.5%), substantial improvement in neurogenic pain (55.6%), prevention of further neurologic deterioration (95.8%), and improvement in hyperhidrosis (100%).</p> <p>5. Complications were CSF leak/collection (8.4%), wound infection (1.7%), cyst recurrence (1.7%), and meningitis (1.7%).</p>
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