

Author Year Country Research Design Score Total Sample Size	Methods	Results
<p>Honore et al., 2020 France Case Control N=95</p>	<p>Population: <i>Case Group (n=19; SCI=11, traumatic head injury=8):</i> Mean age: 24.2 yr; Gender: males=19, females=0; Level of injury: cervical=3, thoracic=8, lumbar=0; Severity of injury: complete=9, incomplete=2; Mean time since injury: 12.6 mo; <i>Control Group (n=76; SCI=44, traumatic head injury=32):</i> Mean Age: 25.3 yr; Gender: males=76, females=0; Level of injury: cervical=11, thoracic=30, lumbar=2; Severity of injury: complete=32, incomplete=12; Mean time since injury: 18 mo.</p> <p>Intervention: The case group underwent HO excision and received perioperative radiotherapy on the operated area. For the majority of case patients, the radiotherapy involved a single preoperative session (at a dose of 7.5 Gy, with 15 or 18 MV X-ray photons) carried out on the day before surgery. The control group underwent HO excision only. Each patient was paired with four control patients.</p> <p>Outcome Measures: <i>Primary Outcome Measure:</i> recurrence of heterotopic ossification; <i>Secondary Outcome Measures:</i> postoperative complications (i.e., sepsis that required surgical revision).</p>	<ol style="list-style-type: none"> 1. Symptomatic recurrence occurred in 10.5% of the case patients (n=2). 2. Almost half of case patients (n=9) developed complications (due to postoperative sepsis) after surgical excision and radiotherapy, requiring surgical revision. 3. Symptomatic recurrence occurred in 5.3 % of the control patients (n=4). 4. Almost one-third of control patients (n=23) developed complications after surgical excision, and 21% (n=16) required surgical revision due to postoperative sepsis. 5. There was no difference between the odds ratios (OR) for recurrence for each group (OR case group=0.63, OR spinal cord injury subgroup=0.45 and OR head injury subgroup=1.04). 6. The rate of sepsis requiring surgical revision was significantly higher in the case group (p < 0.05).
<p>Museler et al., 2017 Germany Case Series N=244</p>	<p>Population: Mean age: 46.4 yr; Gender: males=207, females=37; Severity of injury: AIS: A=220, B=8, C=12, D=4.</p> <p>Intervention: Single-dose radiation therapy at the hip for HO. Mean time of treatment was 4.9 days. Treatment was administered with either 15 MV or 6 MV.</p> <p>Outcome Measures: HO recurrence, side effect due to radiation.</p>	<ol style="list-style-type: none"> 1. Of the 244 patients, 13 experienced recurrence of HO. All 13 patients initially experienced HO in both hips. Of the 444 initial cases of HO, there were 26 instances of recurrence. 2. No patients experienced negative side-effects as a result of radiation treatment.
<p>Sautter-Bihl et al. 2001 Germany Case Series N=52</p>	<p>Population: Mean age: 33 yr; Gender: males=44, females=8;</p> <p>Intervention: Patients received a single dose of radiotherapy 2-10Gy through a linear accelerator at 6-8 MV photons.</p> <p>Outcome Measures: Efficacy,</p>	<ol style="list-style-type: none"> 1. Prevention of HO was seen in 71% of (41 primarily treated, 9 resected) joints. 2. Radiotherapy treatment did not result in a regression of the Brooker score in any patient. 3. An increase in two Brooker

	Brooker classification, adverse effects.	<p>score grades was seen in two joints (1 knee, 1 hip)</p> <ol style="list-style-type: none"> 4. No adverse effects due to therapy occurred. 5. 16 of 32 hips treated only with radiotherapy (50%) did not show any abnormalities on follow-up. 6. No progression of HO was noted in 30/36 subjects (83%). 7. Re-ossification after therapy which led to a decrease in joint mobility was noted in three subjects.
<p>Sautter-Bihl et al. 2000 Germany Case Series N=36</p>	<p>Population: Age range: 17-59 yr; Gender: males=32, females=4; Follow-up range: 4-98mo. Intervention: 25/36 subjects received 10 Gy radiotherapy in fraction of 2-2.5 Gy, while four patients received higher doses. In phase 2 seven subjects received a single dose of irradiation with 8Gy. In total, 46 joints were irradiated. Outcome Measures: Progression of HO and complications.</p>	<ol style="list-style-type: none"> 1. No statistically significant results were reported. 2. 16 of the 32 hips treated with radiotherapy only did not show any abnormalities on follow-up. 3. No progression of HO was noted in 30/36 subjects. 4. Re-ossification after therapy, which led to a decrease in joint mobility was noted in three subjects.