



# Ewing's Sarcoma

**Presented by:** Julia Lottman &  
Tamara Grahovac



# Introduction

- 2nd most common bone cancer
- Bone (87%) > soft tissue
- Common osseous locations: Pelvis, spine, long bones

## Typical Patient Demographics

- ~200 cases a year
  - +10,000 cancer cases in American children projected for 2021
- Males > females
- Almost all cases occur in Caucasians
- Median age at presentation: 15

# Objectives

Characterize clinical and imaging features of Ewing's sarcoma in children

Compare those with pathological fracture cases

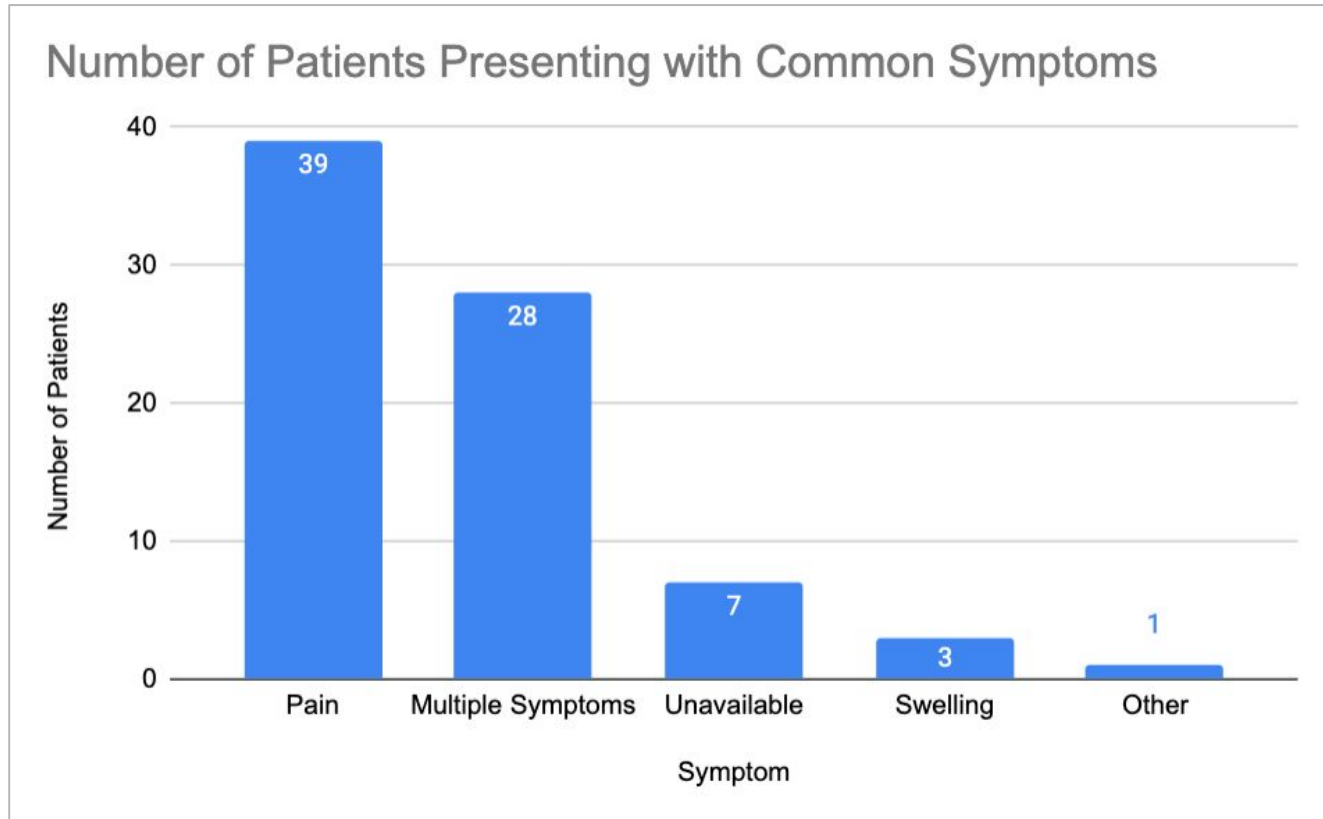
# Methods

- Inclusion n= 78
- Exclusion
  - Exclusion Criteria - 150 excluded
    - No images/no imaging before interventions
    - No follow up after procedures
    - Older than 19 at diagnosis
    - Soft tissue EWS

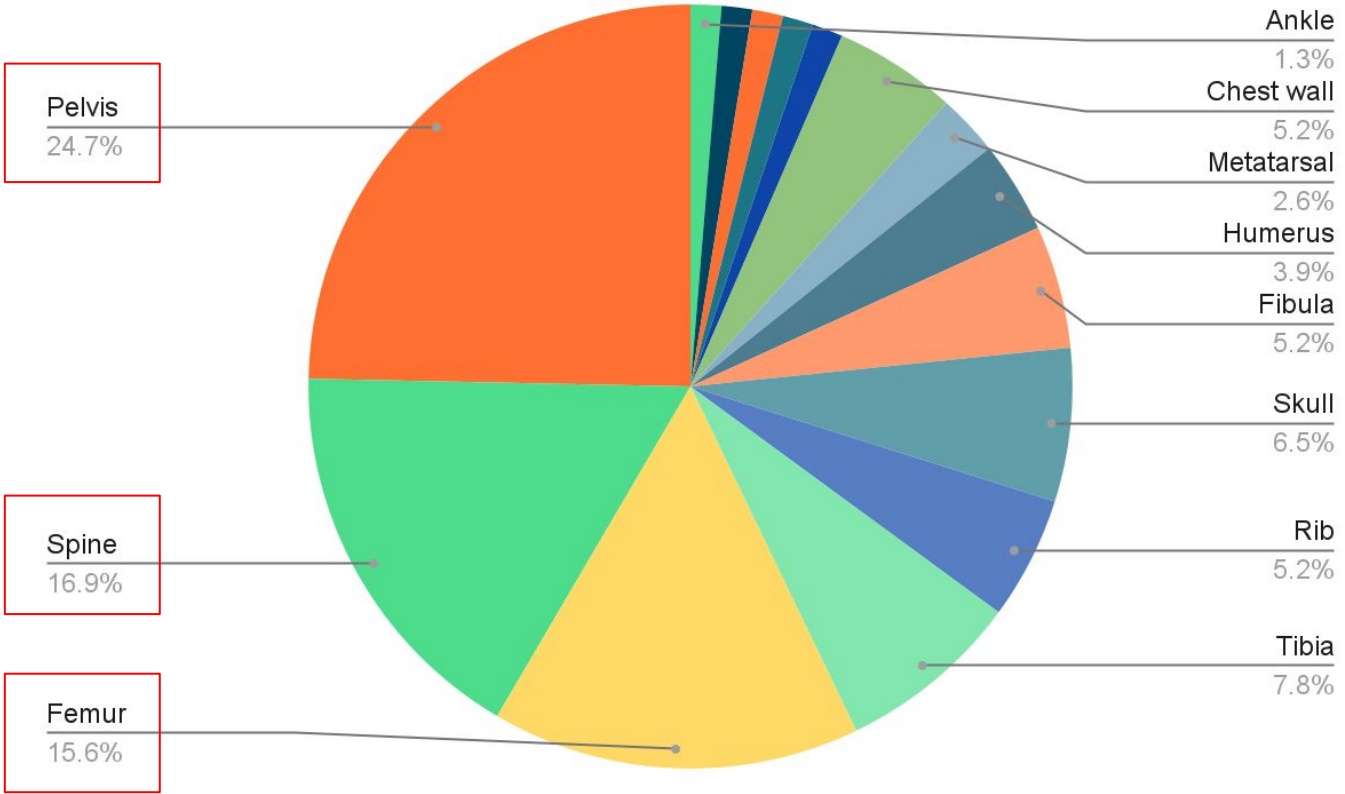
# Results - Demographics

- Study Group (n=78):
  - 41 (52.6%) boys
  - 37 (47.4%) girls
- 9 (11.5%) had pathological fractures
- Age Range: 2 months-18 years
  - Mean: 9.6 years

# Results - Symptoms



# Results - Anatomic Distribution in Bone



# Results - Treatment

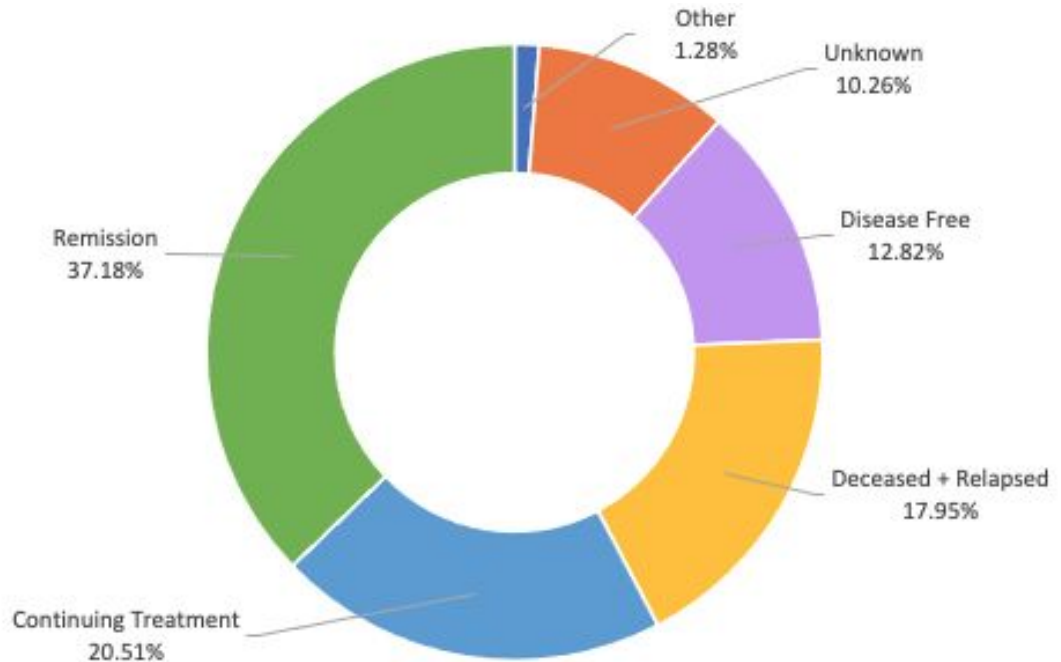
- Surgery - resection/disarticulation/amputation: n=55 ()
  - 43: resection/excision
  - 7: amputations, disarticulation
  - 5: other - craniotomy, irrigation, reconstruction, resuspension





# Results - Outcome

- Continuing Treatment, n = 16
- Remission, n = 29
- Disease Free, n = 10
- Deceased + Relapsed, n = 14
- Other, n = 1
- Unknown, n = 8



# Results - Between Fracture and non-Fracture Patients

	All patients (n=78)	No Fracture (n=69)	Fracture (n=9)	p-value
<b>Age</b>				0.071
Median ± IQR (range)	10±8 (0.17-18)	10±8(0.17-18)	5±7(0.83-16)	
<b>Gender(F:M)</b>	37:41	33:36	4:5	1
<b>Location</b>				0.005
Axial skeleton	46(59%)	45(65.2%)	1(11.1%)	
Lower extremity	26(33.3%)	19(27.5%)	7(77.8%)	
Upper extremity	5(6.4%)	4(5.8%)	1(11.1%)	
Unavailable	1(1.3%)	1(1.5%)	0	
<b>Presenting symptoms</b>				0.006
Pain	39(50%)	37(53.6%)	2(22.2%)	
Multiple symptoms	28(35.9%)	24(34.8%)	4(44.4%)	
Swelling	7(9%)	7(10.1%)	0	
Unavailable	3(3.8%)	1(1.5%)	2(22.2%)	
Limp	1(1.3%)	0	1(11.1%)	
<b>Procedure</b>				0.092
Resection	43(55%)	35(50.7%)	8(89%)	
Radial ablation	7(9%)	6(8.7%)	1(11%)	
Other*	5(6.4%)	5(7.2%)	0	
Unavailable	23(29.5%)	23(33.3%)	0	
<b>Outcome</b>				0.816
Remission	29(37.2%)	24(34.8%)	5(55.6%)	
Continuing treatment	16(20.5%)	15(21.7%)	1(11.1%)	
Deceased/Relapsed	14(18%)	12(17.4%)	2(22.2%)	
Disease Free	10(12.8%)	9(13%)	1(11.1%)	
Other: Palliative care	1(1.3%)	1(1.4)	0	
Unknown	8(10.2%)	8(11.6%)	0	

\*Other Procedure: ...

# Conclusion

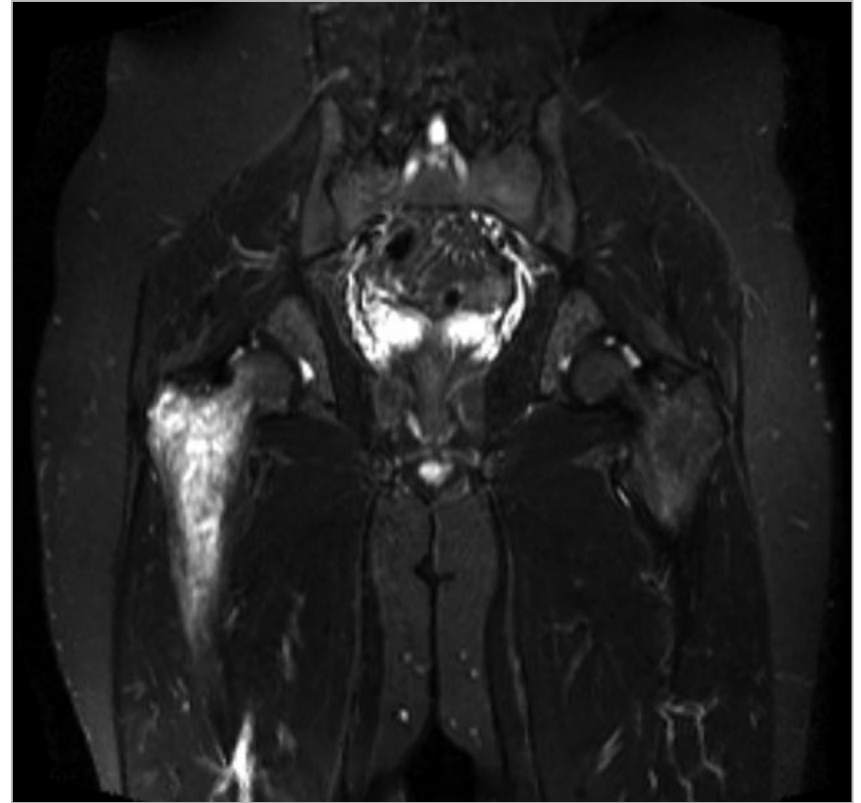
- Most common presenting symptoms
- Most common locations
- Most common treatment
- 11.5% had pathologic fracture and most occurred at diagnosis

# Limitations

- Retrospective study using existing medical records without ability to collect more information
- Small sample size of pathological fractures
- Data from a single academic institution

# Conclusion & Next Steps

- Characterizing features in MRIs
- Compare outcome between those with and without fractures



*Image Credits: Radiopedia*