

Impact of Navigated Radiofrequency Ablation (RFA) on Spinal Tumors

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Background

- 5-10% of patients with cancer develop spinal tumors
- Radiation therapy, the current gold standard, has its limitations, including continued local progression and development of new or worsening vertebral fractures
- Radiofrequency ablation (RFA) is an emerging treatment to decrease spinal tumor burden
- Studies have also demonstrated that local control can be achieved with RFA alone

Methods

- Single center retrospective study
- Patients aged 18-85 who underwent RFA for spinal tumor treatment between October 2013 – July 2020
- Clinical outcomes included ambulatory status and survival rate
- Patient reported outcomes included numerical pain scores and quality of life scores
- Radiological outcomes included post-operative imaging to assess tumor bulk and response to treatment

Results

Patient Demographics				Outcomes			
Age, median years (n=203)	61 (18-85)			15 month post-op mortality (n=192)	46.4%		
Male, n (%), n=203)	123 (59.7%)			Readmitted within 30 days (n=170)	51 (30%)		
BMI, median (n=203)	24.3			Average days to readmission (n=51)	13 days		
General condition (KPS) (n=157)				Post-op Ambulatory Status (n=159)			
Poor (KPS 10-49%)	12 (7.6%)			Ambulatory	96 (60.4%)		
Moderate (KPS 50-69%)	35 (22.3%)			Non-ambulatory	23 (14.5%)		
Good (KPS 70-100%)	110 (70.1%)			Unknown	40 (25.2%)		
Tokuhashi score, (median n=150)	8						
Mets to internal organs (n=167)	119 (71.3%)						
Independent ambulators (n=167)	130 (77.8%)						

	Patient Reported Pain Scores			Pain Interfering with ADLs			
	Mean	Med	StDev	Yes	No	Total	
Pre-operatively (n=157)	5.18	5.00	2.91	0-4 months post-op	53 (43%)	69 (57%)	122
0-4 months post-op (n=121)	3.50	4.00	2.41	5-8 months post-op	25 (34%)	48 (66%)	73
5-8 months post-op (n=76)	2.94	2.50	2.41	9-15 months post-op	13 (22%)	45 (78%)	58
9-15 months post-op (n=63)	2.95	2.60	2.51				

Implications

- Previous studies have been limited to case reports. Further study is required to determine whether RFA alone and/or in combination with other therapies improves local tumor control

Conclusions

- Individuals who underwent RFA for spinal tumors saw improved patient reported pain scores and decreased pain interfering with ADLs
- This preliminary data has helped to better understand the potential benefits of RFA as an alternative treatment for cases of metastatic disease
- Due to the inherent limitations of retrospective chart review studies, this study is limited to data collected at time of intervention and follow-up visits resulting in patients lost to follow-up or with incomplete data

Disclosures

- None