

POSTER PRESENTATION

Blunt Cerebrovascular Injury – SQUH Experience

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INTRODUCTION

- Blunt Cerebrovascular Injury [BCVI] is an injury to the carotid or vertebral artery.
- BCVI results from stretching or impingement of the vessel walls due to sudden head movement.
- Incidence: 1–2% in general and 9% in cases of severe head trauma.
- Stroke is the most serious complication, with Incidence ranging from 1-26 %.

AIM

Primary aim:

- To establish clear recommendations for the management of BCVI.

Secondary aim:

- To study the national incidence of BCVI-related complications.

METHODS

Study design: Retrospective

Setting:

- Sultan Qaboos University Hospital, a level-one trauma center in Muscat, Oman.
- January 2017 to December 2020

Inclusion criteria:

- Adult, blunt trauma.
- CTA of the head and neck.
- Expanded Denver screening.

Data Analysis: SPSS, v25

Figure 1: Biffl grading distribution of included patients.

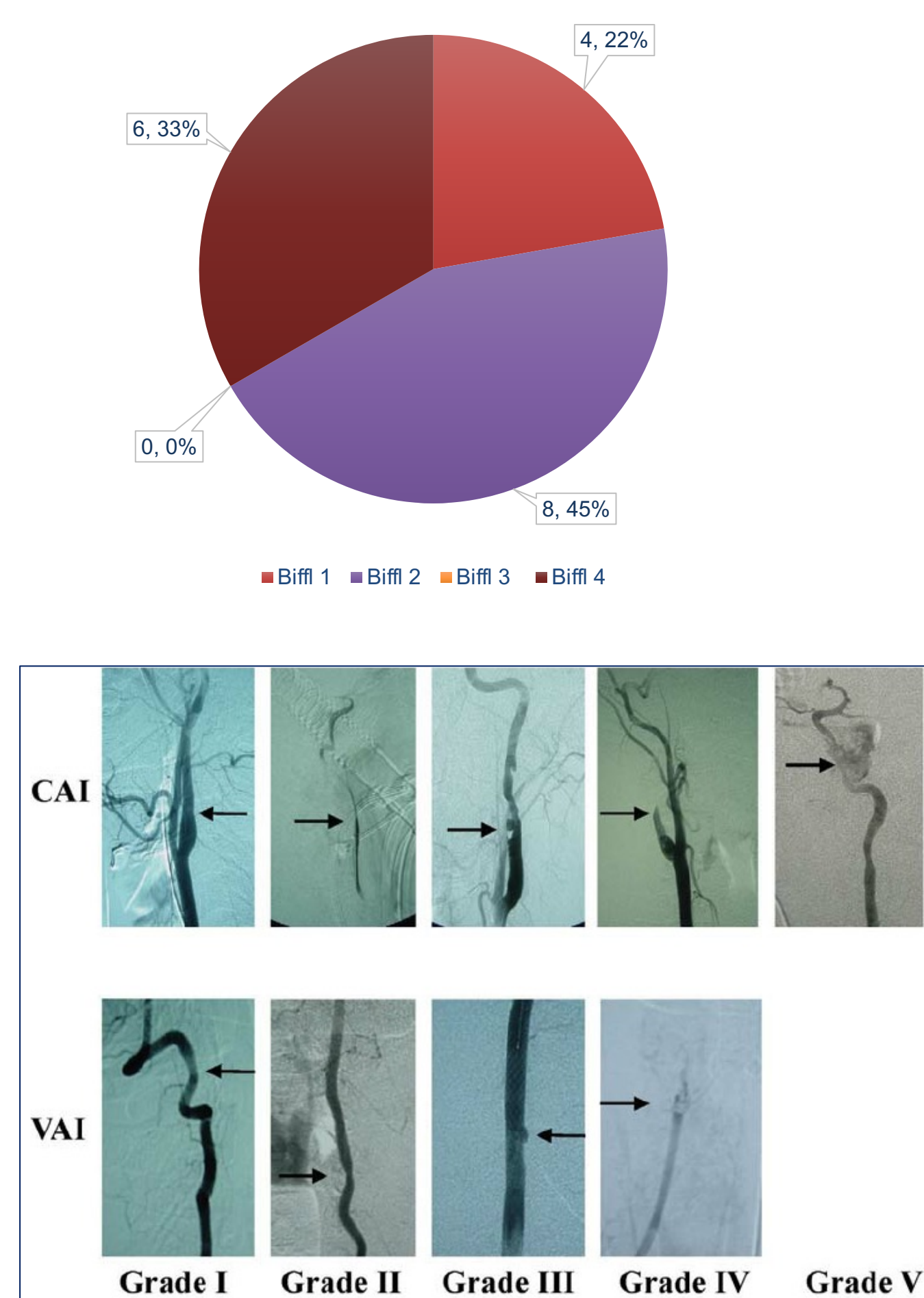


Figure 1: Pie chart represents the biffl classification for the BCVI depending on imaging findings, as it is shown that most patients had grades 2 and 4. Two patients had bilateral injuries with different grades.

RESULTS

- A total of 871 patients with blunt trauma were screened.
- 16 patients: Positive for BCVI.
 - 5 patient carotid artery injuries (31%)
 - 11: vertebral artery injuries (68.8%).
 - 8 received medical treatment (50%).

Table 1: clinical presentation and management of the included patients

Variables (unit)	Number (%)	Mean ± SD
Presentation	No deficit	10 (62%)
	Neurological deficit	6 (28.6%)
Artery involved	Carotid artery	5 (31.3 %)
	vertebral artery	11 (68.7 %)
Management	No Management	8 (50%)
	ASA only	5 (31.3%)
	ASA + Heparin	3 (18.7%)
	Surgical	0 (0%)

Table 1 showed that among those with BCVI, five had carotid artery injuries (31.3%), and 11 had vertebral artery injuries (68.8%). Also, Six patients had neurological deficits on presentation, and 3 out of 6 had an ischemic stroke on imaging.

Table 2: Association between BCVI grading, artery injuries, and the presentation with neurological deficit.

Variables	Neurological deficit at presentation		Statistically significant (P-value)	
	Yes	no		
Biffl grade	1-2	4	7	0.017
	3-4	5	0	
Artery	carotid	1	4	0.049
	Vertebral	8	1	

Table 2 highlights the association between the Biffl grading, type of artery injury, and the presence of neurological deficit at the time of initial presentation, which both turned out to be significant with a *p*-value of 0.017 and 0.049, respectively.

Table 3: Association between therapy administration and development of new-onset stroke.

Variables	New onset stroke		Statistically significant(P-value)	
	Yes	no		
Treatment	Received	0	8	0.27
	Not received	1	6	

Table 3: The *p*-value was insignificant when comparing those who received medical therapy to those who did not.

Figure 2: Recommended guideline

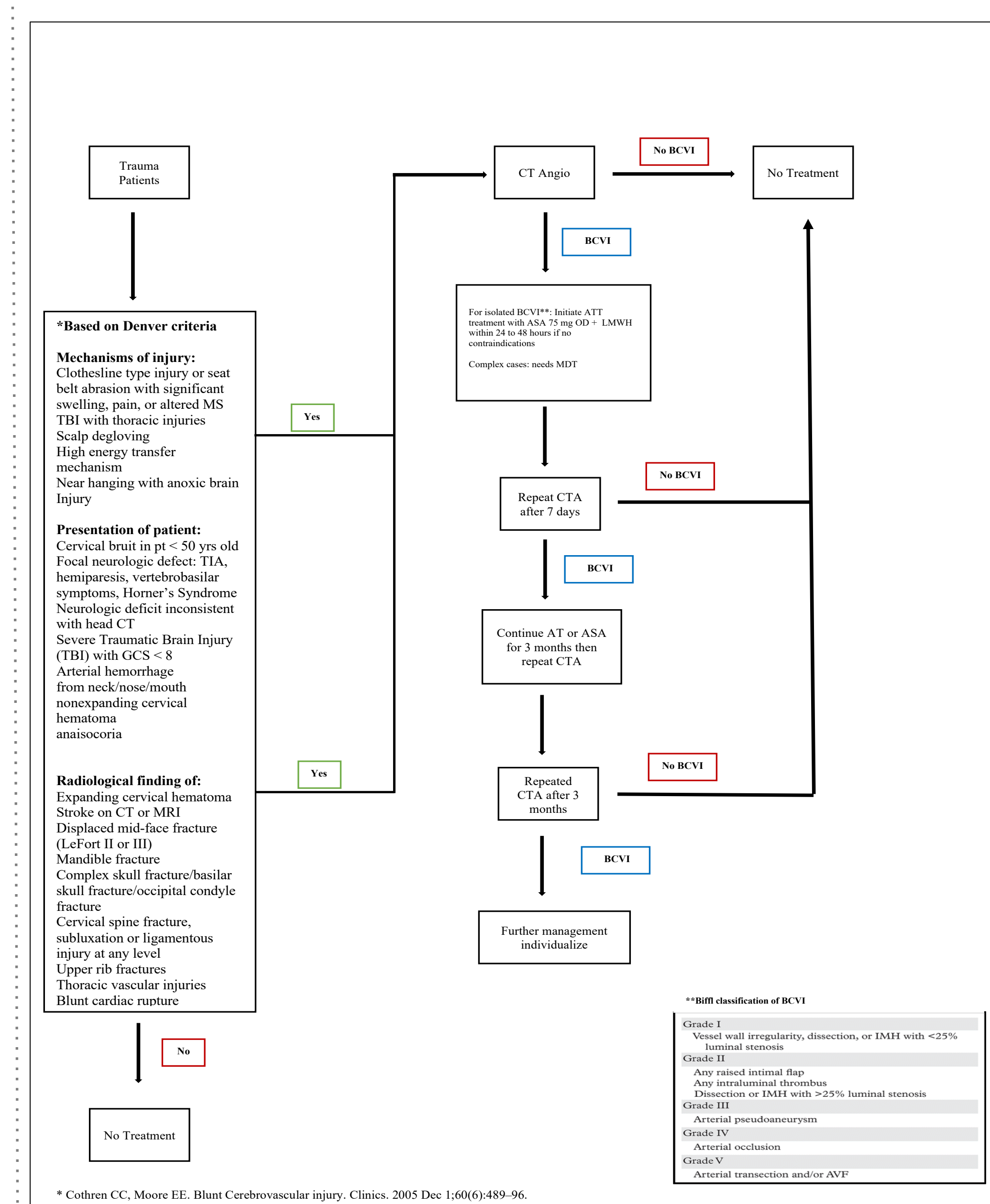


Figure 2 represents the recommended guideline after reviewing recent literature on the management of BCVI.

CONCLUSIONS

- Treatment is Controversial.
- Initiation of ATT medication is essential for stroke prevention.
- Endovascular intervention: Controversial
- Repeat CTA after 7 days and 3 months.

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