



Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you "**Cardio Mag**", which contains latest and interesting news in the field of Cardiology.

This issue contains

- NT pro BNP to predict a lesion in Coronary artery in Kawasaki disease
- A unique case of Eagle's syndrome presenting with bleeding – A case report.
- Whether to use or not use RAAS inhibitors in COVID 19

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback.

Best Regards,

Medical Team, Micro Labs Limited

1. NT pro BNP to predict a lesion in Coronary artery in Kawasaki disease

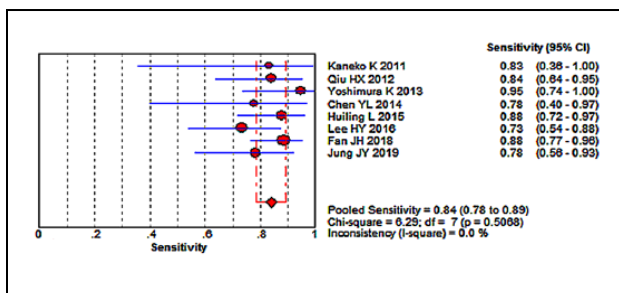
Kawasaki disease (KD) is a self-limited systemic vasculitis. Presently, KD is most prevalent in children of acquired heart diseases around the world.¹

Children present with acute fever. If not diagnosed, 15-25% of affected patients can develop coronary artery abnormalities.²

Serum N-terminal pro-brain natriuretic peptide (NT-proBNP) is used as biomarker for the diagnosis and monitoring disease progression in heart failure according to guidelines.

Methods :

Current study is meta analysis to ascertain the diagnostic value of NT-proBNP in detecting Coronary



Artery Lesion of Kawasaki Disease in the acute phase extensive research from pubmed, Cochrane registry 287 articles were selected among these 24 studies were selected and finally eight studies eligible were included.

8 studies included 196 coronary artery lesion patients and 660 non coronary artery lesion

patients.

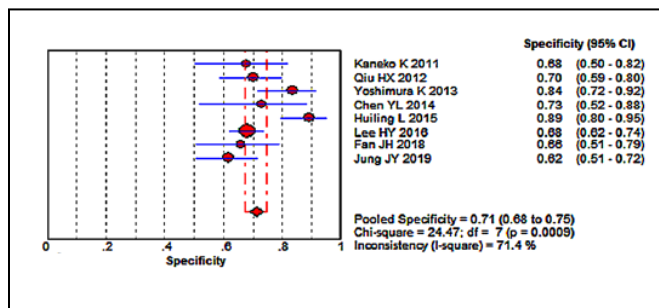


Results:

This meta analysis was first in assessing the sensitivity and specificity of NT-pro BNP in detecting coronary artery lesion.

The diagnostic sensitivity and specificity were 0.84 (95% confidence interval [CI]: 0.78–0.89) and 0.71 (95% CI: 0.68–0.75), respectively.

The overall sensitivity and specificity across five studies adopted the threshold of approximately 900 ng/L were 0.82 (95% CI: 0.73–0.89) and 0.72 (95% CI: 0.68–0.76), respectively.



No.	First author	Year	Countries	Design	Diagnostic criteria	Sample size of non-CAL/ CAL	Mean age of non-CAL/ CAL (month)	Mean NT-proBNP levels in patients with non-CAL (pg/ml)	Mean NT-proBNP levels in patients with CAL (pg/ml)	cut-off (pg/ml)	AUC	sensitivity	specificity
1	Kaneko K	2011	Japan	prospective	JKDRC	37/6	26.4/21.6	1,073	2,611	1,000	0.788	0.83	0.68
2	Qiu HX	2012	China	retrospective	AHA	77/25	21.5/13.3	865	1,726	827	0.803	0.84	0.70
3	Yoshimura K	2013	Japan	prospective	JKDRC	61/19	24.0/13.2	450	2,590	1,300	0.932	0.94	0.83
4	Chen YL	2014	China	prospective	CMA	26/9	24.0/20.4	590	1,023	900	0.77	0.78	0.73
5	Huiling L	2015	China	prospective	JKDRC	73/33	31.2/32.4	830	2,775	950	N/R	0.88	0.90
6	Lee HY	2016	Korea	retrospective	AHA	257/30	28.8/39.1	1,088	2,744	853	0.739	0.73	0.68
7	Fan JH	2018	China	retrospective	JKDRC	47/52	N/R	650	2,607	565	0.75	0.88	0.67
8	Jung JY	2019	Korea	retrospective	AHA	86/23	38.5/32.0	396	824	515	0.749	0.78	0.62

Characteristics of studies in meta-analysis. CAL = coronary artery lesion, NT-proBNP=N-terminal pro-brain natriuretic peptide, AUC = area under the curve, JKDRC= Japan Kawasaki Disease Research Committee, CMA = Chinese Medical Association, N/R = not report.

Discussion:

Kawasaki disease (KD) is an illness seen in early childhood and the primary cause of acquired heart disease during childhood. Coronary artery lesions like Coronary artery aneurysms (CAA) are a serious complication of KD, leading to ischemic heart disease, myocardial infarction. Timely diagnosis in the first ten days of fever is crucial to reduce the risk of coronary artery complications.³

NT-proBNP is a valuable biomarker for predicting Coronary Artery Lesions(CAL) of Kawasaki Disease. In current study, mean NT-proBNP level in KD patients with CAL was much higher than in KD patients without CAL (approximately 2500 ng/L vs. 800 ng/L).

Current study also showed that overall diagnostic sensitivity and specificity of NT-proBNP for diagnosis KD with CAL in the acute phase were 0.84 and 0.71 respectively.

Conclusion:

NT-proBNP is a useful biomarker for detecting Coronary Artery Lesions of Kawasaki Disease.



References:

- 1) Zheng X, Zhang Y, Liu L, et al. N-terminal pro-brain natriuretic peptide as a biomarker for predicting coronary artery lesion of Kawasaki disease. Sci Rep. 2020;10(1):5130. Published 2020 Mar 20.
- 2) Singh S et al. Kawasaki Disease in India, Lessons Learnt Over the Last 20 Years. Indian Pediatr. 2016;53(2):119–124.
- 3) Dionne A et al. A Decade of NT-proBNP in Acute Kawasaki Disease, from Physiological Response to Clinical Relevance. Children (Basel). 2018 Oct; 5(10): 141.

2. A unique case of Eagle's syndrome presenting with bleeding – A case report

Eagle's syndrome as the name suggests, it was described by Eagle in 1937. It is characterized by an elongated styloid process or or calcified stylohyoid ligament. It affects 4% of the general population, but only a few cases are symptomatic. It presents with repeated pharyngalgia, foreign body sensation in throat and tinnitus. In severe cases change in voice and taste have been reported.

Here is the presentation of a unique case of eagle's syndrome presented with carotid bleeding.

Case presentation:

A 58-year-old man presented with sudden onset of swelling in the right cervical region with haemoptysis after coughing. He also had difficulty in swallowing and talking .

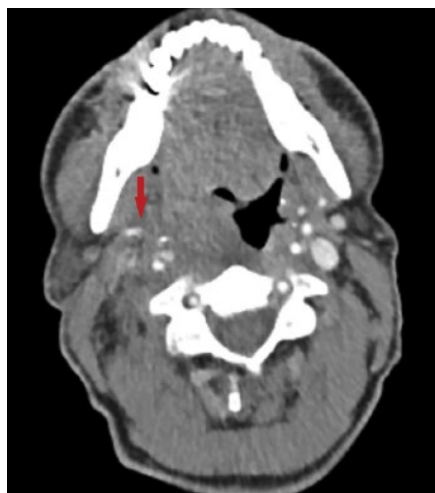
A tender palpable right cervical mass was seen on clinical examination. There was no stridor or dyspnea, but he had hoarse voice. Neurological examination was normal.

Differential diagnosis included neoplasm of head and neck, temporomandibular joint disorder, sinusitis, tonsillitis, lymphoma, esophageal diverticula, and carotid artery aneurysm.

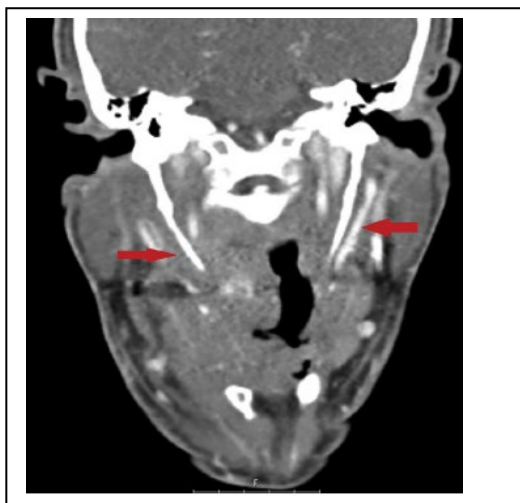


Laboratory investigations and chest X ray were normal. Flexible laryngoscopy showed a bulging hematoma in the right lateral cervical region. CT angiography with 3-mm slices showed an arterial blush ventrally to the internal carotid artery, 3 cm above the carotid bifurcation on the right side without an adventitial hematoma or dissection as shown in figure .

Styloid processes on both sides were longer than normal when bone structures were examined: 48 mm on the right, 53 mm on the left as shown in figure. the right styloid process was adjacent to the internal carotid artery and there was a slight compression of the artery. CT angiography after 8 h and did not



reproduce the arterial blush.



MANAGEMENT. Initially the patient was monitored in the intensive care unit. His respiration was stable. After 3 weeks a bilateral resection of the styloid processes through a transcervical approach was performed.

A tiny skin incision was made at the ventral side of the sternocleidomastoid muscle. After incising platysma and the sternocleidomastoid muscle was followed until the level of the digastric muscle, which was cranially retracted on the internal and external carotid artery. No bruising or other fragility was observed on the carotid arteries. A vessel loop was placed around the external carotid artery and lifted laterally. The bony parts of the

stylohyoid ligament and styloid process were transected as cranially as possible. The remaining proximal part was luxated laterally. Hypoglossal and glossopharyngeal nerve were identified and spared.

Discussion:

The cartilaginous tip of the styloid process is continued over the lesser cornu of the hyoid bone as stylohyoid ligament.

An elongated styloid process or aberrant ossified stylohyoid ligament can cause symptoms

In classic type , presents with various odynophagia and dysphagia and the vascular type with neurological





symptoms.

A few authors suggest a length >3 cm is abnormal, but others suggest a length of more than 4 cm is



abnormal because the association with symptoms is higher. CT scan is gold standard for diagnosis. Treatment depends on the symptoms. In the vascular type, a surgical resection of the styloid process to be considered because of potential serious complications. Usually a transoral or transcervical approach is chosen.

Post-operative course of patient was uneventful. The symptoms resolved, and patient was doing well after 5 months. CT angiography at that time showed resolution of the hematoma with no further abnormalities.

Conclusion:

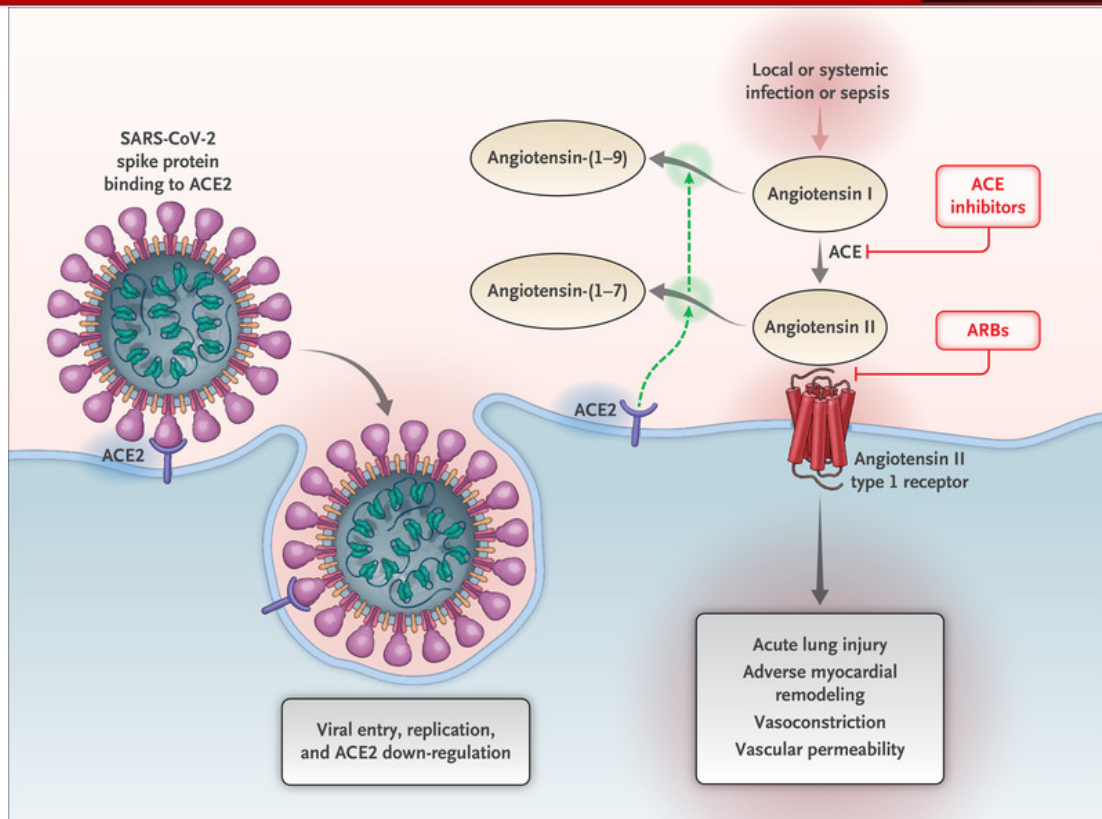
A unique case with carotid bleeding was successfully managed with surgery. Besides stroke, carotid bleeding can also compress and perforate vessel. Hence utmost care is taken in management of Eagle's syndrome.

Reference:

- 1) Ramachandra KK et al. Carotid type of Eagle's syndrome. J Indian Soc Periodontol. 2015 ; 19 : 336-8.
- 2) Michaels TD et al. Eagle Syndrome A Unique Cause of Carotid Bleeding. J Am Coll Cardiol Case Rep 2020; 2: 449–53.

3. Whether to use or not use RAAS inhibitors in COVID 19

A huge debate is going on the renin-angiotensin-aldosterone system (RAAS) inhibitors, such as angiotensin-converting-enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs), should be stopped in COVID-19 patients. However Study by Vaduganathan suggests that they provide known benefits to patients , harms are still unproven.¹



Experts on RAAS have provided a special report summarizing the evidence about the use of ACE inhibitors and ARBs, in patients with COVID-19. The data is provided as recommendations from various They suggested that treatment with RAAS inhibitors should not be changed out of concerns that they might increase or decrease risk in patients with COVID-19.²

COVID 19 enters cells by binding to ACE2 as a receptor. ACE2 counters RAAS activation, by degrading angiotensin II to angiotensin-(1-7), reducing angiotensin II's effects on vasoconstriction, sodium retention, and fibrosis. Nevertheless, whether ACE inhibitors or ARBs harm patients with COVID-19 or, even, are protective against the disease remains unknown.

Infact , withdrawing RAAS inhibitors in patients for whom they are indicated could be expected to increase risks from patients underlying conditions or from COVID-19 complications. Hence the suggestion of continuing RAAS inhibitors use until better evidence suggests otherwise.

Reference:

1. Vaduganathan M et al. Renin-angiotensin-aldosterone system inhibitors in patients with Covid-19. N Engl J Med 2020 Mar 30; [e-pub]

Available at: <https://www.dicardiology.com/content/no-evidence-supporting-discontinuing-raas-inhibitors->

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[covid-19-patients](#). Accessed on 13-04-2020.



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