Recognizing the Signs and Symptoms of a Vertebral Artery Dissection (Stroke) in Progress

Presented by The Joint Corporation's Chief Chiropractic & Compliance Officer James Edwards, DC

Primary Resource: Association of Chiropractic Colleges Video Presentation by Gerry Clum, DC , 2008

Presenter's Bio

James D. Edwards, D.C.
Chief Chiropractic & Compliance Officer

- **38 years of clinical practice**
- **8 years on the Kansas Board of Healing Arts that licenses MD's, DO's and DC's**
- **15 years in state association leadership**
- **12 years in ACA leadership including Chairman of the Board of Governors**
- **Current Texas ICA Representative Assemblyman**
- **Expert witness in over 100 chiropractic malpractice cases**

Let’s Take It from the Top!

Anatomy review

Histology of blood vessels review

Review of basic pathology mechanisms

Anatomy Review

Arterial circulation:

A. Origin of Vertebral arteries

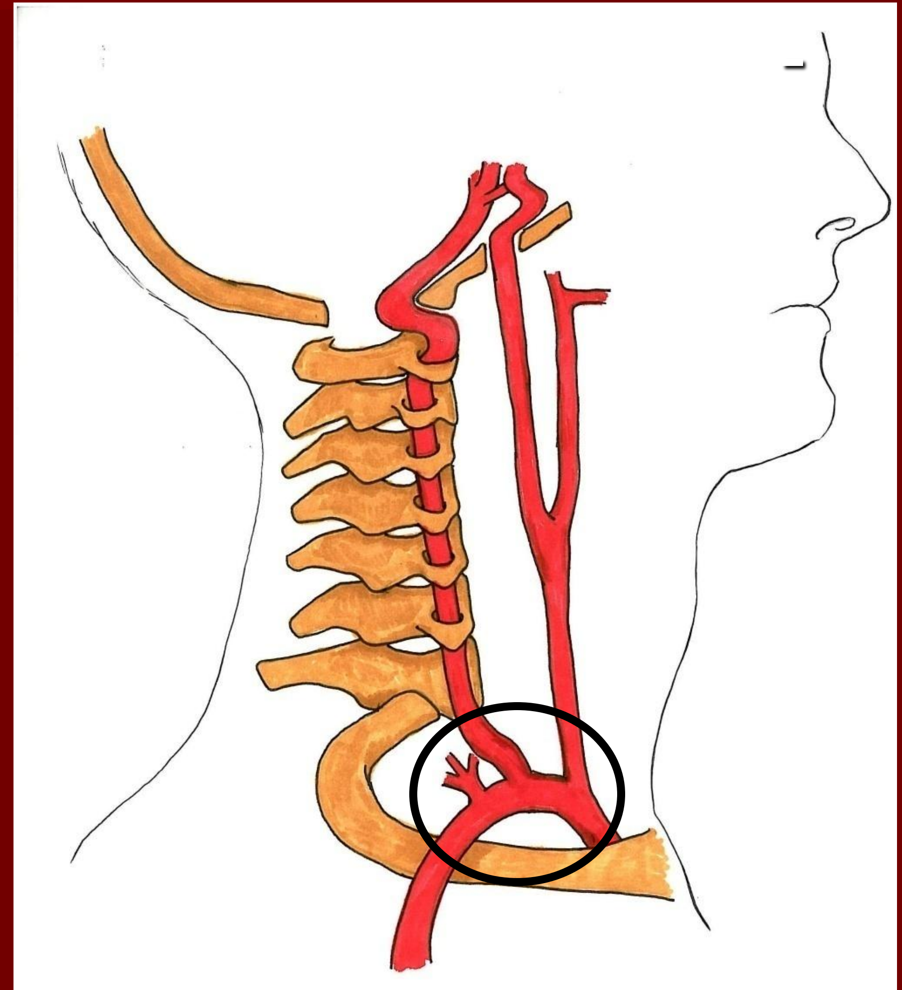
B. Course of the Vertebral arteries

C. Distal distribution from the Vertebral arteries

Arterial Circulation

A. Origin of the Vertebral arteries:

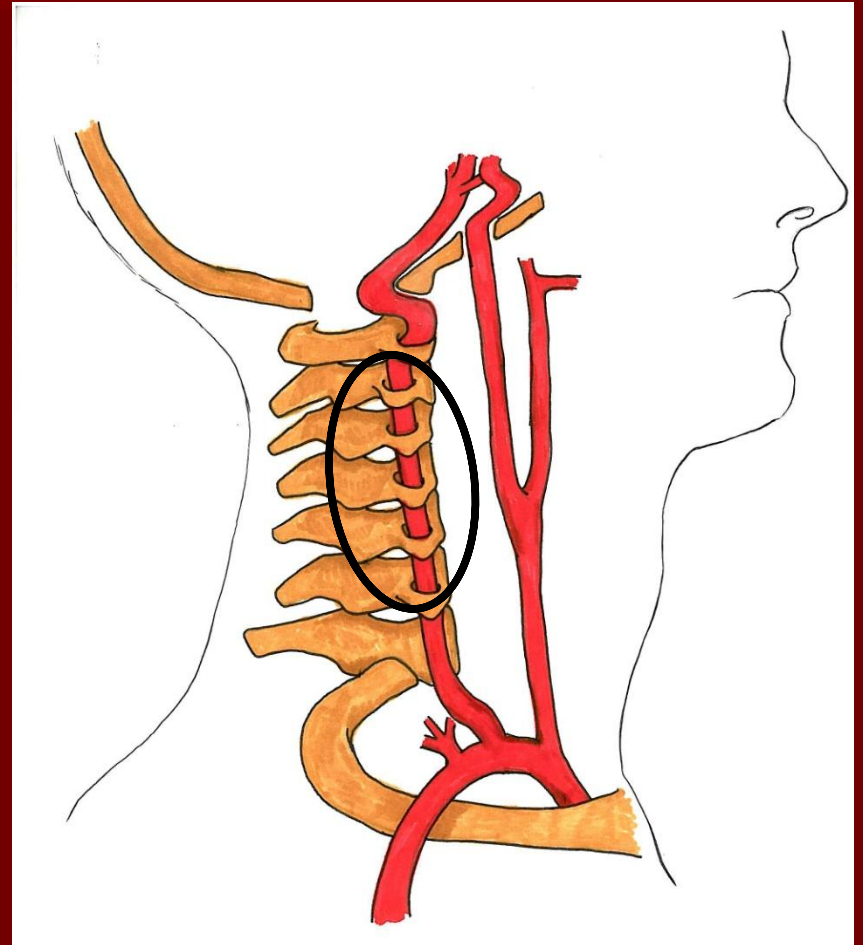
The left and the right Vertebral arteries arise from the Subclavian artery.



Arterial Circulation

B. Course of the Vertebral arteries:

Within the transverse foramina from C5/C6-C2 and then through the C-1 transverse processes.



Arterial Circulation

C. Distal distribution from the Vertebral arteries

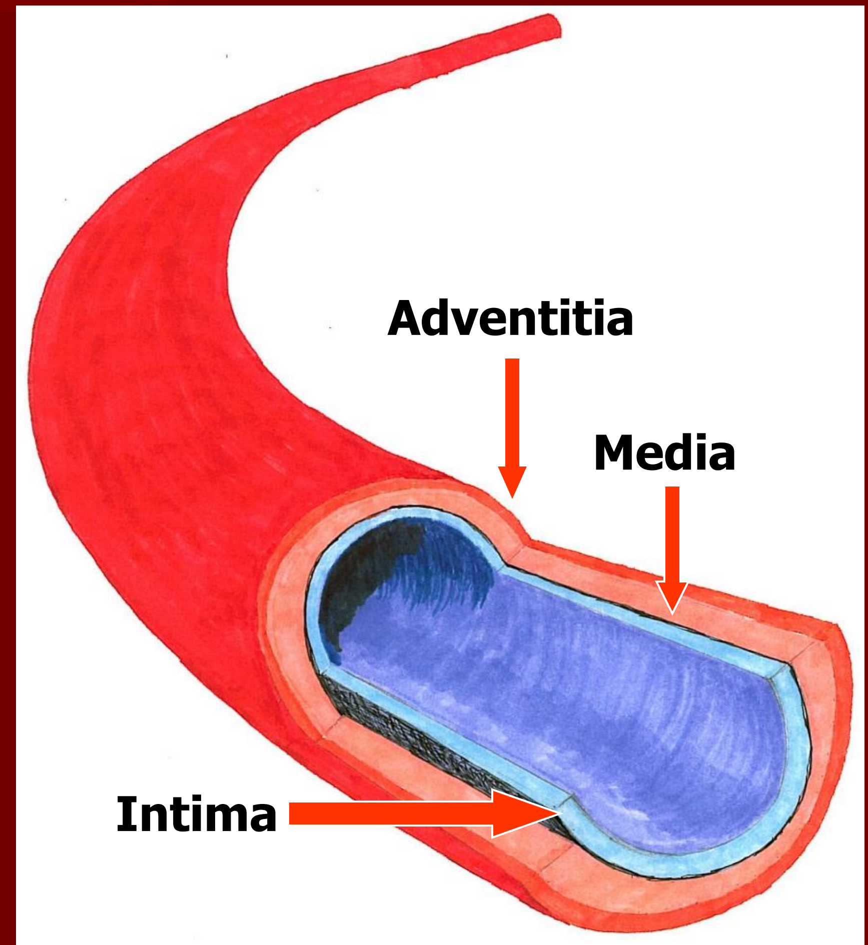
The Vertebral arteries continue to unite and form the Basilar artery

Prior to the junction of the right and left Vertebral arteries forming the Basilar artery the Posterior Inferior Cerebellar artery (PICA) is given off.

Histology of blood vessels review

The Vertebral arteries are comparable in size and design to the Renal arteries or some of the smaller Coronary arteries.

They exhibit the typical 3 layer pattern from inside out of a tunica intima, tunica media and a tunica adventitia.



Origins of Vertebral Artery Dissection

The literature indicates that VAD arises spontaneously, from trivial movement, minor trauma or major trauma.

The following have been cited in the literature as preceding a VAD - Judo, yoga, ceiling painting, nose blowing, hypertension, oral contraceptive use, sexual activity, receiving anesthesia, use of resuscitation activities, receiving a shampoo, vomiting, sneezing and chiropractic care.

Vertebral Artery Dissection

Mechanism of origin

According to Haldeman et al. Spine 1999 Apr 15;24(8):785-94

I. 43% of are spontaneous in nature

II. 31% were "associated" with cervical spine manipulation

III. 16% from trivial trauma

IV. 10% from major trauma

Vertebral Artery Dissection

Incidence of VAD

From the literature:

- 1 in 1 million adjustments (Hosek et al, JAMA, 1981)
- 1 in 2 million adjustments (Klougart et al, JMPT, 1996)
- 1 in 5.85 million cervical spine adjustments (Carey et al, CMAJ, 2001)

Vertebral Artery Dissection

Predictors of VAD

"Thus, given the current state of the literature, it is impossible to advise patients or physicians about how to avoid vertebrobasilar artery dissection when considering cervical manipulation or about specific sports or exercises that result in neck movement or trauma." (Haldeman et al, Spine 1999)

Clinical Pearl Number One

Current thinking holds that the majority of patients who develop frank symptoms of a vertebral artery dissection following chiropractic care were in the process of dissection when they presented for care.

Pre-adjustment screening tests

We were all taught “George’s Test”, “DeKlynes Test” and other tests for Vertebral artery competency.

You have been told by many people from your teachers, to your colleagues, to your professional liability carrier, to your risk management consultants to use these provocative tests—**<u>Don’t</u>**.

Pre-adjustment screening tests

George’s Test or DeKlyne’s Test yield an unacceptable percentage of false positives and of false negatives. It tells you nothing reliable.

For the patient who has a VAD-in-progress, the testing itself may be enough to make a bad situation worse.

Pre-adjustment screening tests

In March 2004 all of the clinic directors of all of the U.S. chiropractic colleges and programs agreed to abandon the teaching of and use of provocative testing of this nature.

At the same meeting the presidents/deans accepted the recommendation of the clinic directors.

Pre-adjustment screening tests

Bottom-line: There are no reliable or safe tests that will rule out a VAD-in-progress. There are no tests that will identify a patient at risk for VAD.

Your best evaluative tools are: Your ears and your eyes.

What is a Doctor to Do?

If there are no clear-cut predisposing factors suggesting VAD, and

If there are no testing procedures helpful in ruling out potential VAD patients, and

If the great majority of VAD-in-progress patients present with musculoskeletal complaints, then,

What is a doctor to do?

What is a Doctor to Do?

Look, listen, ask and think

Look for What?

- Five "Ds"
  - Dizziness
  - Drop attacks
  - Diplopia
  - Dysarthria
  - Dysphagia
- And
  - Ataxia
- Three "Ns"
  - Nausea
  - Numbness
  - Nystagmus

Look for What?

To assist patients in informing our doctors, The Joint’s intake forms have the following list of symptoms:

- Dizziness
- Numbness on one side of the face or body
- Difficulty Swallowing
- Difficulty Walking
- Difficulty Speaking
- Fainting/Light Headed
- Double Vision
- Rapid Eye Movement
- Neck or Head Pain Like Never Before

Look for What?

It is also important for your Wellness Coordinators to know those signs and symptoms so they can drop everything and alert the doctor if the patient presents with or notes any of those symptoms.

Clinical Pearl Number Two

There is one characteristic, almost pathognomonic statement from your patient whether they be an existing patient getting their 100th adjustment or a new patient getting their first chiropractic adjustment…

Clinical Pearl Number Two

What is That Statement?

"I have a pain in my neck and (or) head *unlike anything I have ever had before.*"

Ask What?

DC: Tell me some more about this pain.

DC: Were you doing anything before you experienced the pain, or did it come out of the blue?

DC: What other symptoms are you having…paying very special attention to focusing on the signs and symptoms of VAD in progress?

Think About What?

Stopping cold in your tracks when you have heard *The* phrase.

Taking a step back, slowing down and paying close attention to everything about this patient.

When a Patient Shows Signs of Possible VAD Before or After an Adjustment

Your management of the situation and your documentation of the situation are the most important issues in reducing morbidity and mortality as well as in limiting or reducing liability.

When a Patient Shows Signs of Possible VAD following an Adjustment

Your recognition of the post-adjustment symptomatic picture is critical. You cannot assume because a VAD is extremely rare it won't or didn't happen.

Keep your antenna up!

When a Patient Shows Signs of Possible VAD in progress Before or Following an Adjustment

If the patient shows any of the 5 D's, an A or any of the 3 N's pay attention immediately.

If the symptoms are mild monitor them for their decrease or their resolution. If there is any doubt, immediately call 9-1-1.

What symptoms should be monitored?

Each situation will require a different response, but in general the clinician should be monitoring the patient's vital signs as well as the specific neurological response that has drawn attention.

The availability of baseline vitals (BP) will cause this data to be more meaningful.

When a Patient Shows Signs of Possible VAD following an Adjustment

- If the symptoms are very transient, limited and resolve quickly take a position of "watchful waiting".
- Consider the area adjusted, the type of adjustment given and if an alternate approach would be in order.
- Do not readjust the patient at that time!

When a Patient Shows Signs of Possible VAD following and Adjustment

If the symptoms do NOT resolve monitor the patient, stay with the patient—no matter how stacked up the waiting room is.

Watch for the development of additional symptoms, note the mental status, degree of confusion if any, etc.

Do not readjust the patient at that time!

When a Patient Shows Signs of Possible VAD following an Adjustment

If the symptoms persist, or if the symptoms worsen seek immediate emergency services support. Monitor the patient while waiting for support services.

Do not readjust the patient at that time!

Why Not Readjust?

If the patient is experiencing a VAD there is no type of adjustment that will minimize the consequences of the dissection and the introduction of another force may serve to create emboli and increase the likelihood of an ischemic event.

Why Not Wait and See What Happens?

If the patient has experienced a VAD, and if it has resulted in a thrombus being formed and emboli being thrown, it will likely result in cerebellar or brainstem ischemia. Emergency pharmaceutical intervention, i.e. tPA, is most effective in the first 90 minutes, moderately effective for three hours and possibly effective for up to six hours, so time is of the essence.

Professional Liability Complications

1. Your failure to recognize what is going on, or to write it off as a “normal” or “typical reaction to an adjustment”.

2. Your failure to monitor and document the progress of the patient following the onset of the problem, as well as to document your thought processes regarding the situation.

3. Your failure to manage the situation properly and in a timely manner.

Professional Liability Complications

4. Readjusting the patient
5. Sending the patient home if in an unstable or fragile state
6. Taking a casual approach to seeing another provider- "you might want to…"
7. Failing to document what went on, what you were thinking, what you did, being less than honest and explicit in the record.

Tomorrow Morning

1. There is no need to be fearful of delivering a competent cervical spine adjustment.
2. Pay close attention to the patient’s presentation and his/her response following cervical spine adjustments.
3. Do NOT assume it couldn’t happen in your office.

Tomorrow Morning

4. Authorize your staff to dial 9-1-1 if they feel that the patient needs emergent care.

5. Document, document, document.

6. Understand the mechanisms involved and respond accordingly.

Tomorrow Morning

7. Evaluate your procedures in general, are you asking the questions you should be asking, are you and your staff attuned to catching subtle changes in your patients, does your staff have mechanisms to let you know about things they see in patients?

8. Act in the best interests of the patient, always in all ways-this is ultimately in your best interest as well.

Important Final Advice

Based on current scientific literature (Herzog), it is this presenter’s professional opinion that a <u>properly administered</u> chiropractic adjustment cannot harm a <u>healthy</u> vertebral artery.

However, if a VA dissection is in progress, a cervical adjustment can make matters much worse very quickly.

Important Final Advice

Based on current scientific literature, it is this presenter's professional opinion that most strokes in chiropractic clinics were in progress when the patient presented for treatment…and why it is absolutely essential that the doctor/staff be able to recognize those signs and symptoms.

Important Final Advice

Based on current scientific literature (Cassidy), it is this presenter's professional opinion that strokes do not occur in chiropractic offices in any greater frequency than they occur in the offices of medical physicians. Since MD's do not perform manipulation, it is highly unlikely that cervical adjustments cause strokes.

Further Information

This presentation is a condensed, revised and updated version of Dr. Gerry Clum's video presentation endorsed by the Association of Chiropractic Colleges.

This webinar and Dr. Clum's full video will be placed on the Help Desk to hopefully ensure that The Joint's current and future doctors have the tools to recognize a VAD in progress and to take the necessary actions on behalf of your patient.

Questions?

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