

Ultrasound guidance for interventional pain management of cervical pain syndromes : an anatomical and clinical study

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Ultrasound Guidance for Interventional Pain Management of Cervical Pain Syndromes

An anatomical and clinical study

Samer Narouze

Maastricht, 13 June 2012

1. 'Seeing is believing' is an idiom that means "only physical or concrete evidence is convincing". It leads to a sophistry that "seen evidence" can be easily and correctly interpreted, when in fact, interpretation may be difficult. This also applies to ultrasound in pain procedures. *(this Ph.D.-thesis – Chapter 1)*
2. Ultrasound guidance can improve safety of stellate ganglion block by visualizing the esophagus and various neck vessels. *(this Ph.D.-thesis – Chapter 3, 5)*
3. Critical blood vessels can be encountered during cervical transforaminal injections. This can be avoided by the use of ultrasound. *(this Ph.D.-thesis – Chapter 4)*
4. Atlantoaxial joint injections are very helpful in the diagnosis and treatment of cervicogenic headache stemming from this joint. *(this Ph.D.-thesis – Chapter 6)*
5. Hand and eye coordination is an essential skill to master ultrasound-guided pain procedures. *(this Ph.D.-thesis – Chapter 8)*
6. 'If Speech is Silver, Silence is Gold'. Ultrasound is sound waves with a frequency $>20,000$ Hz. This is higher than the human audible range.
7. Poor eyesight (myopia) is associated with higher IQ.
8. The human brain stops growing between the age of 18 and 21 years.
9. After age 30, the brain shrinks 0.25% each year.
10. Every time you sneeze some of your brain cells die.