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Case

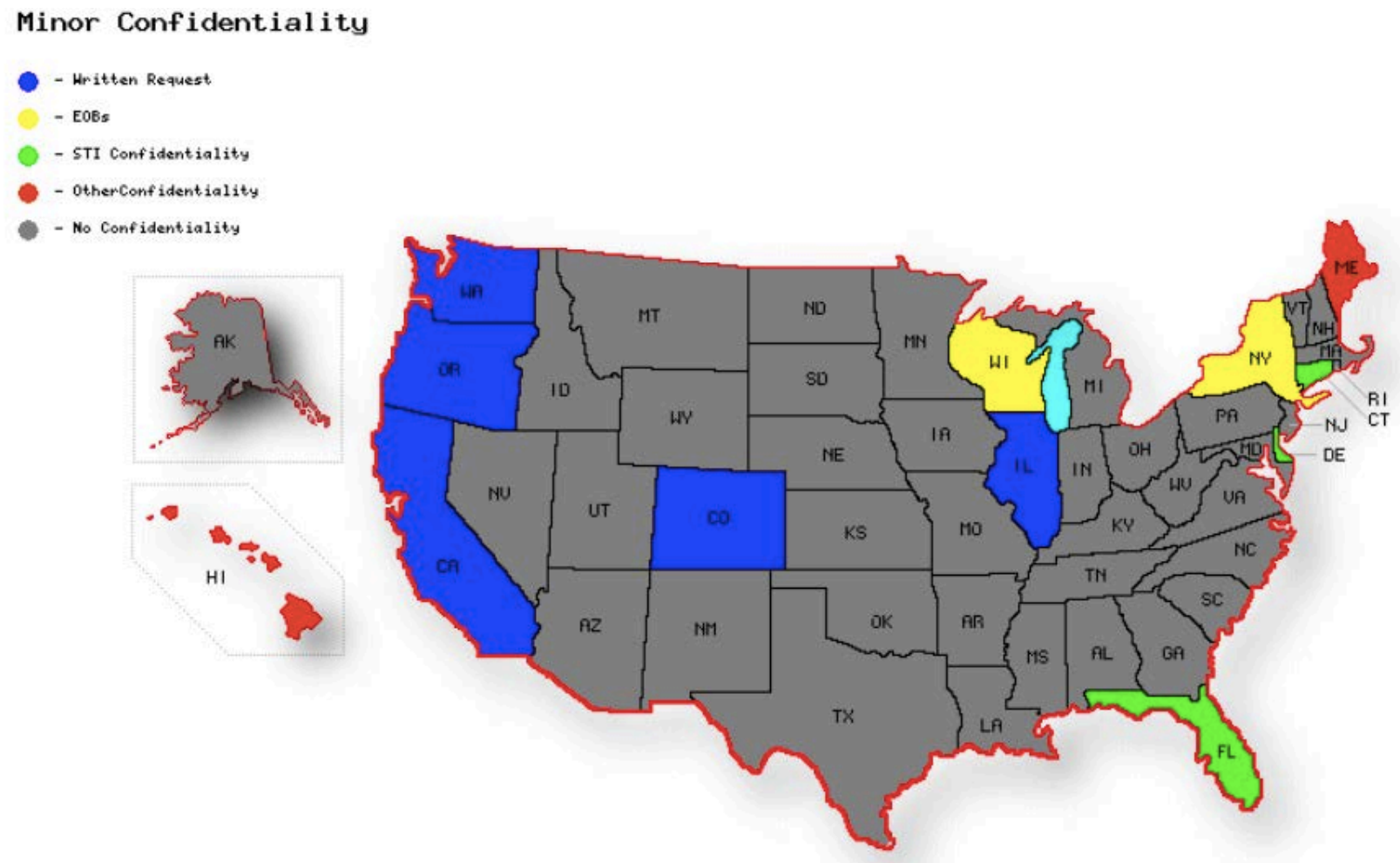
J.D. is 19 year old female who presented for an IR embolization for an arteriovenous malformation in her left index finger. She was otherwise healthy and had a urine pregnancy test in preop which was negative. She did not receive any midazolam. She underwent general anesthesia with a supraglottic airway device for just under 1 hour and 45 min, during which time her arteriovenous malformation was embolized, under fluoroscopic guidance, centered on her hand. She also received a dose of ketorolac and ondansetron intraoperatively. She had no complications post-operatively and was discharged home the same day. About one week later, J.D. called back to the clinic stating she had taken a urine pregnancy test with a positive result and she was concerned about the effects of her recent procedure to the fetus. Her radiologist counseled her that the radiation exposure to her abdomen was minimal. At a follow up visit 1 year later J.D. had her infant child with her.

Non-Obstetric Surgery in Pregnant Women

- VTE prophylaxis
- aspiration prophylaxis
- Left uterine displacement
- Avoid hypotension, hypoxemia, hyper/hypocarbica
- Titrate meds to effect, altered sensitivity
- FiO2 >50% and etCO2 32-34
- Minimize uterine manipulation
- Monitor FHR pre and post op, intraop and postop for viable fetus (>23 weeks)
- No currently used *anesthetic* agents have been shown to have any teratogenic effects in humans when using standard concentrations at any gestational age

Discussion

- Radiation Exposure
 - Increased risk during first trimester
 - Radiography and fluoroscopy - Decreased significantly If fetus outside of the field of view
 - Computed tomography is much more complicated to calculate, and delivers higher doses of radiation
- Minor confidentiality varies state to state
 - Difficult to protect privacy in preop
 - A minor is not emancipated until the baby is born
- Pregnancy tests (urine & serum)
 - Positive result after implantation
 - Serum earlier than urine
- Medications
 - NSAIDS
 - Anti-emetics
 - benzodiazepines



References:

1. McCollough, Cynthia H. PhD, et al. "Radiation Exposure and Pregnancy: When Should We Be Concerned?" *RadioGraphics* 27, no. 4 (July-August 2007). [http://www.ubccriticalcaremedicine.ca/academic/jc_article/Radiation%20Exposure%20and%20Pregnancy%20\(Apr-30-09\).pdf](http://www.ubccriticalcaremedicine.ca/academic/jc_article/Radiation%20Exposure%20and%20Pregnancy%20(Apr-30-09).pdf)
https://urldefense.proofpoint.com/v2/url?u=http-3A___www.ubccriticalcaremedicine.ca_academic_jc-5Farticle_Radiation-2520Exp_urs-2520and-2520Pregnancy-2520-28Apr-2D30-2D09-29.pdf&d=DwMFAg&c=aFamL_AssMIDYjNgIYHTMvOiqFn3z4pVFYpQkjsgpw4Y&r=k-Phe2_cAi5LmopTSC61kCw&m=3nKzBSVCA1D8zGzU0d11vBY7Nv-hunj5bVq6Vi0l&s=vXnNOT5Aed0FA3wIz0S5VjsQWVDmYRH7aBkrKcAYzM&e=>
2. "A Minor's Right to Consent to Treatment and Authorize Disclosure of PHI." November 2015. https://www.uwhealth.org/files/uwhealth/docs/pdf/minors_legal_grid.pdf
https://urldefense.proofpoint.com/v2/url?u=http-3A___www.uwhealth.org_files_uwhealth_docs_pdf_minors-5Flegal-5Fgrid.pdf&d=DwMFAg&c=aFamL_AssMIDYjNgIYHTMvOiqFn3z4pVFYpQkjsgpw4Y&r=k-Phe2_cAi5LmopTSC61kCw&m=3nKzBSVCA1D8zGzU0d11vBY7Nv-hunj5bVq6Vi0l&s=s03BrOSBmsOZZeCfHTD1qP9Yq3pKcMszk3vvXa2A&e=>
3. "Protecting Confidentiality for Individuals Insured as Dependents." February 1, 2018. Guttmacher Institute. <https://www.guttmacher.org/state-policy/explore/protecting-confidentiality-individuals-insured-dependents>
4. O'Connor RE, Bibro CM, Pegg PJ, Bouzoukis JK. The comparative sensitivity and specificity of serum and urine HCG determinations in the ED. *Am J Emerg Med* 1993; 11:434.
5. Committee on Obstetric Practice and the American Society of Anesthesiologists. Committee Opinion No. 696: Nonobstetric Surgery During Pregnancy. *Obstet Gynecol* 2017; 129:777.
6. Koren G, Florescu A, Costei AM, et al. Nonsteroidal antiinflammatory drugs during third trimester and the risk of premature closure of the ductus arteriosus: a meta-analysis. *Ann Pharmacother* 2006; 40:824.