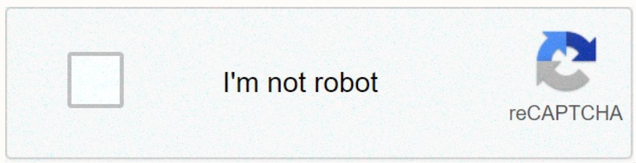

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Arnold chiari malformation type 1 pregnancy

Chiari's disability management during pregnancy is challenging due to the perceived risk of poor mother neurological outcomes and increasing intracranial stress during childbirth. Our goal is to assess the management and health outcomes of pregnant women cared for in regional reference centres and highlight the elements of best practices. The series of retrospective cases of all pregnant women diagnosed with Chiari disability for fourteen years (January 2004-June 2018) at Birmingham Women's Hospital - UK. Twenty-one women (23 pregnancies) with Chiari disability included, four have syringomyelia (4/21.19%) and six previously underwent craniovertebral (6/21, 29%) decompile. The median age is 34-year-old (range 20-41), the median grade is two (range 1-8), the median parity is one (0-6 range), and the mediansillar level of herniation is 11 mm (range 9-18). Majority of women receive their preferred delivery mode (15 common vaginal deliveries (15/23, 65.2%) and 6 elective Caesarean sections (6/23, 26.1%)) with two pregnancies ending up with an emergency caesarean section for obstetric complications (2/23, 8.7%). Five parts of Caesarean were performed under general anaesthetic, two under the spine (2/23, 8.7%) and one under epidural anaesthet (1/23, 4.3%) without a neurological sequel. There was no bad neurological outcome on emissions afterwards. Offering regular vaginal transmission with effective analgesia, for women with Chiari disability, seems safe. Pregnancy care should be provided by a multi-disciplinary team experienced in managing Chiari's disability. click on the title to see the video presented by Roger Kula, MD; NSPC, Lake Success, NY by Diane Mueller, ND, RN, C-FNP The reason I became very interested in this is because the frequency of times I had these discussions not only clinically but on the phone or over the Internet: is it safe to plan a pregnancy when you have Chiari? Is it safe to give birth to a vagina? Should I have a c-section? I have also been contacted by many healthcare providers, asking if it is safe for patients to have vaginal deliveries. And what I found was there was very little literature to support either having vaginal or epidural shipping. When I returned to study some literature, I found some very old studies that cite patients studyed without Chiari diagnosis or syrinx, so keep in mind this is a general population study and most of these studies were done before 1965. I couldn't find anything in literature that was really very recent. What I found in literature was that the pain during labor had the biggest impact on CSF pressure, but that's not really surprising and I'm sure it doesn't surprise any of you to hear that. But surprising me is, during the phase active, it raises nearly 700mm of water [see Figure 1], that's a significant increase in CSF pressure. Of course that would make anyone worry about pressure or intraspinal pressure during the active phase of labor. This study supports epidural anaesthety during contractions to control pain. So pain control during contraction is one of the most important factors in controlling CSF pressure during active labor. Again this is a patient studied who does not have a Chiari diagnosis or syringomyelia at the time of delivery. Then I went on to study literature for patients who had been diagnosed with Chiari and even had a pregnancy whether planned or unplanned. What I found again was a very few documented article in literature. There were several scattered notes of a single case report beginning around 1994/1995, most recently reported in 2002 [see Figure 2], and this is a report of 12 patients surveyed who had Chiari's disability diagnosis. There is no mention of patients who have syringomyelia, which I think are interesting, but they report they have Chiari disability. They are delivered with either epidural, local anesthesia or general anesthesia. General anaestheses are for c-sections, and none of the women of these 12 are reported to either aggravate or experience new symptoms either during pregnancy, during childership or after childery. So this is an encouraging study I found because first it was the biggest case study I found, 12 women. And it shows that there is no development of new symptoms or worsens the symptoms and certainly no reported complications either during pregnancy or during delivery. This is one of our gorgeous baby girls born to a young woman in Rochester, NY. He was about 26 years old while undergoing surgery; she has about 9mm herniation and very large cervical syringomyelia. He did well after the surgery, and syrinx was actually settled 3 months later on an MRI. The baby was born about 13 months after her decompression surgery. She was really fine during her pregnancy; he has no new symptoms. He had no symptoms during labor; he laboured for about 3 1/2 to 4 hours, and he had an epidural injection during labor. He has no problems related to shipping, and has no problems since. She does it well and as you can see a healthy baby girl. [see Figure 3] I don't have time to go over each case individually, so I want to summarize the 6 patients we follow prospectively during their pregnancy and talk about each one briefly. We follow 6 young women average age 27, so the age range for these guys is 23 to 31 years old. The average amount of herniation is 8mm in this group. The most common symptoms reported on the presentation to us are headaches, very typical and classic Chiari disability. There were three women, one with syrinx who said they had been diagnosed with Chiari's disability but before they had surgery. This is a woman who has a pregnancy after diagnosis but before decompression surgery. We have 3 women, women, one with syrinx, which delivers after posterior fossa decompression. These are women who were diagnosed, underwent decompression surgery and then delivered after their surgery. Of course, they are not pregnant during their surgery. We have 1 c-section and 5 vaginal deliveries. 2 women have an epidural anesthesia, have absolutely no problems with epidural anesthesia, have no complications, and do not report increased symptoms due to epidural anesthesia. We have 1 woman who has an intrathecal anaesthetic to c-section. He sent it threefold. I'll talk about him just a little bit. He is a very unique case for us and is possibly for most people who follow Chiari patients. We have 1 woman who reports depression, tachycardia and high blood pressure, all worse during her second and third trimesters of pregnancy; However, they were settled after meddled. It would be interesting to ask if depression, tachycardia and high blood pressure were due to pregnancy, or because of Chiari's disability? This woman hasn't had surgery yet so it's hard to say what came first, the pregnancy that caused this defect or chiari that worsens. We have 2 women who reported a significant increase in their headaches during pregnancy. It is difficult to explain that if intracranial pressure and intraspinal pressure increase. It is difficult to explain how headaches actually improve during pregnancy, but these are self-reported symptoms that have improved. We then have 3 women who report no changes or worsen their symptoms during pregnancy, during pregnancy or afternatal care. When we look back through our series, more than 300 patients, we note that some patients have reported whether their symptoms start during pregnancy, starting during pregnancy or starting right afterwards. And in looking a little closer to this, these are 12 additional patients, this is not out of them 6, they 6 are extra. We have 2 of her headaches starting during pregnancy; They can actually remember, Gosh, I was fine until I was pregnant with my second child. Suddenly I started experiencing symptoms. We have 3 patients whose headaches are worse during pregnancy. In other words, they have headaches before pregnancy, but for some reason the symptoms get worse, and that is 3 of them 12. We have 5 patients who say their headache gets worse after an epidural anaesthety for vaginal transmission. We have 1 patient who has a headache that gets worse after childer or not an epidural anesthesia, so for some reason intracranial stress increases and pain worse. And then we had 1 patient whose headaches recurred. He was decomposed, had a decompression procedure, by the way, not with us. Her headache recurred after her first pregnancy. So he had chiari malformation decompression and then his headache repeated after he first first and that's again a little different. Some of the conclusions we can draw and certainly in a way there are no conclusions based on each individual patient, if you plan a pregnancy, you need to talk to your individual suppliers and ensure that they understand Chiari, that they understand syringomyelia and that they understand that complications can present themselves. In our series with 6 patients, we do not have patients who report significant improvements in symptoms during and afternament. We have no epidural anaesthetical complications associated with Chiari. Now it's not to say patients don't have wet pipes and need to have blood patches afterwards. These are symptoms associated directly with Chiari, whether they had previous surgery or not. Again, the real risk of intracratic pressure and intraspinal pressure with intrathecal or epidural anaesthetic is completely volatile. I cannot find in the literature of any case report that specifically states there are problems with vaginal transmission, epidural anesthesia or intrathecal anesthesia directly related to Chiari; and in our series, we have nothing. But again, it's important to talk to your supplier about Chiari's disability. Make sure your OB/GYN understands harassment, understands the complications that can arise, and you can share this information with that person. Just to see some of the other little babies that have been born. This is a beautiful little baby born in Missouri. The mother has normal vaginal transmission, has no problems during pregnancy and certainly no problems during childborn, and as you can see, it is a normal healthy little girl. And this little boy, you can see not having problems with laughter, laughter doesn't cause him any problems with headaches, and any pictures you see him laughing like that, so, fortunately, a typical healthy baby that has been born. This is a bit of a unique case. This is a young woman we saw originally back in 1999. He is one of our medical students at the University. He was diagnosed quite a coincidence; he has had some headache, kind of blowing him to stress during school, kind of making all kinds of excuses for this headache he has. He eventually had an MRI and was diagnosed with Chiari's disability; she has a 5mm herniation. We saw him and he really wasn't so problematic with his symptoms at the time. He wants to finish schooling. He didn't feel he needed surgery at the time. He has no syrinx. So we followed it for about a year and a half. Almost the 4th year of her medical training, she began to have trouble swallowing. And really deteriorating in very fast fashion, have aspirations, start choking on food and liquids and really start to get itself into trouble. He chose later to go ahead and undergo decompression surgery. He did very well; again he had no syringomyelia at the time of diagnosis or at the time of surgery. He gets medical school, he started residency of family practice and soon after about 4 months after he started residency of his family's practices, he decided that he did so well, he wanted to go to the OB/GYN and that was his dream to start with was for the OB/GYN. So he did so, he eventually moved to another state, he went to OB/GYN to start residency and have the residency [see Figure 8] He didn't plan at 3, he planned at 1 but he didn't plan at 3 and that was a bit surprising to him. She did well during her pregnancy. He has a c-section; she did not have vaginal transmission due to an increased risk to the baby, becoming a double birth. She didn't have it because of Chiari's disability or because of her surgery, she had a c-section, she had an intrathecal injection before delivery of the baby, altogether fine. Have no symptoms during pregnancy. Even with a triple carry, he has no related symptoms, he has no related symptoms ever since. Diane Mueller, ND, RN, C-FNP Department Neurosurgery University of Missouri at Columbia One Hospital Drive NSG N521 Columbia, MO 65212-0001 65212-0001