

PROVING THE VACUUM EXTRACTOR CASE VISUALLY

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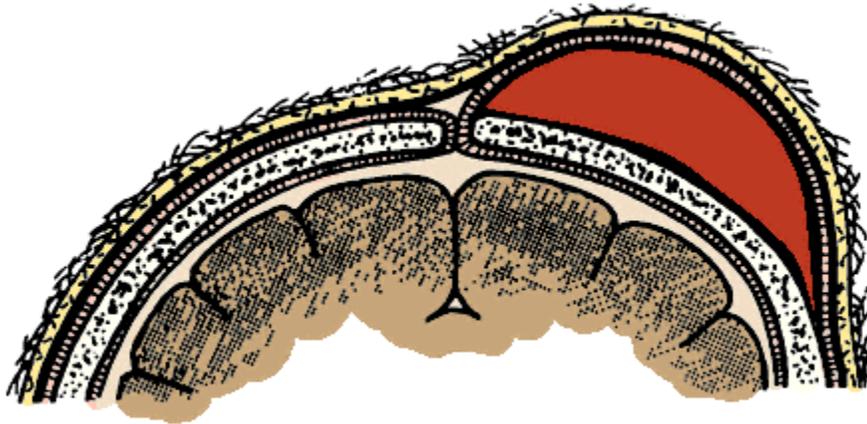
Vacuum extractors can be used in lieu of forceps to help complete a vaginal delivery in lieu of forceps. A vacuum extractor is a suction cup device that is placed on the baby's scalp and is maintained in place via suction pressure. The device has a handle on the other end that the physician uses to pull the head through the incision as well as create the suction pressure that allows the suction cup to remain attached to the head. With proper training, an obstetrician can use the vacuum extractor to safely assist the mother in completing a vaginal delivery. Some obstetricians also use the vacuum extractor to assist with caesarean delivery. Rather than spend the additional time and effort to carefully cut through the adhesions (scar tissue) that may be present from prior caesarean deliveries to extend the incision so that the head could be passed, the obstetrician will attach the vacuum extractor to the head to pass the head through a smaller incision. Below is a diagram of one of the brands of vacuum extractors:

Advanced Mystic® II Pump and Cups



A physician should obtain informed consent prior to using a vacuum extractor. The patient should be advised that there is a risk of brain injury with use of the vacuum extractor even when used appropriately.

After a baby is delivered using a vacuum extractor, the baby will often develop a cephalohematoma over the area of the head where the suction cup was placed. A cephalohematoma is a collection of blood under the scalp that will often appear as a swollen, perhaps discolored bump, and is a common minor complication of the vacuum extraction that appears under the area where the suction cup was placed. The cephalohematoma is itself harmless and will go away with time. It serves, however, as a landmark as to where the suction cup of the vacuum extractor was placed. Below is an anatomical diagram depicting a cephalohematoma:

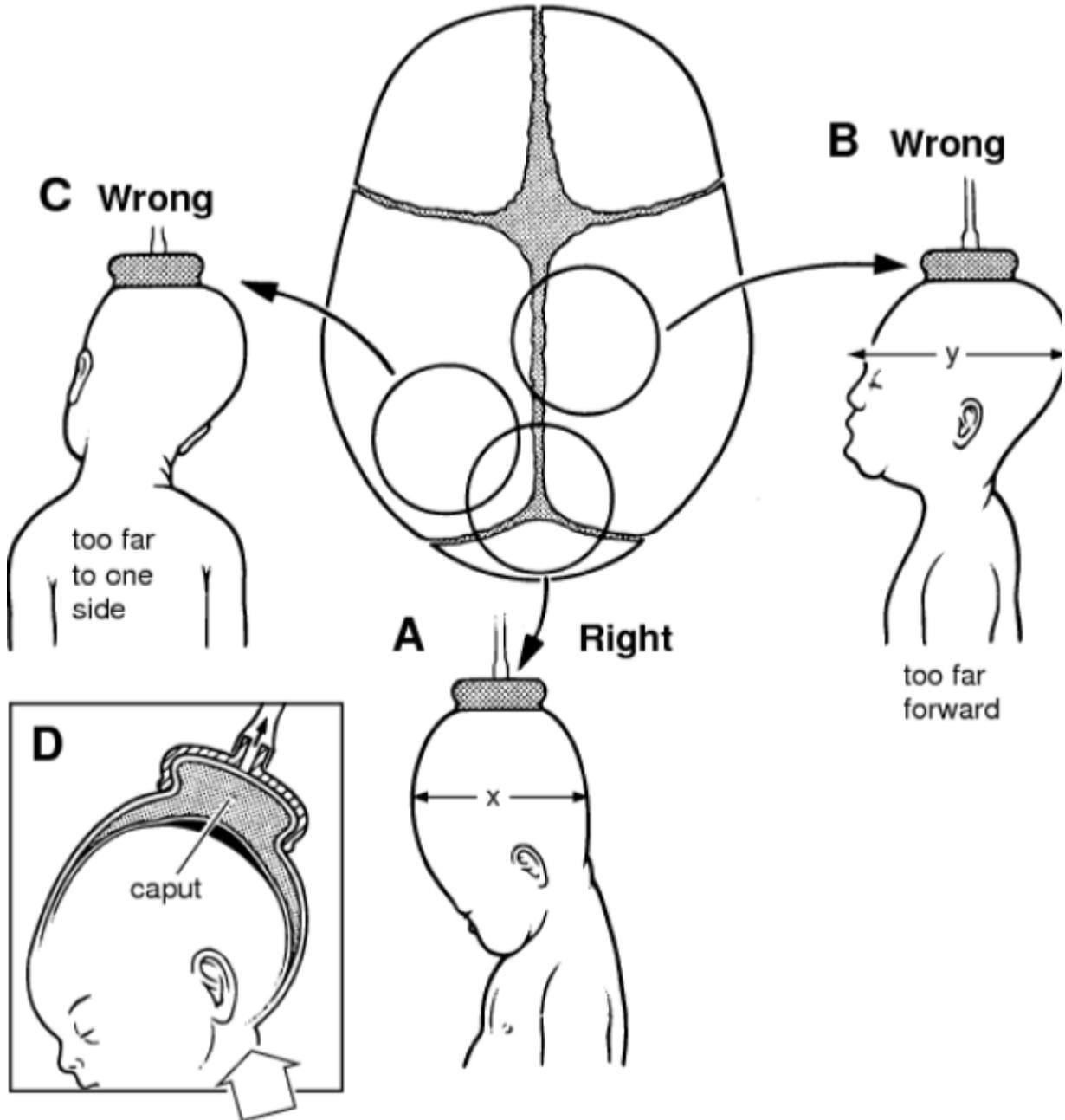


Cephalohematoma

The vacuum extractor is supposed to be attached to the scalp, and then suction pressure is applied by the obstetrician using the handle portion of the device to raise the suction pressure within a certain range recommended by the manufacturer. Below the range will be insufficient pressure and the suction cup will pop off the head before it can achieve its desired result of passing the head. The number of “pop offs” should be recorded in the chart as well as the fact that the vacuum extractor was used in the first place. Too much pressure can result in the suction failing to pop off before too much traction is applied by the obstetrician. If the suction cup does not pop off at this point, injury can occur to the skull and brain as it can be crushed and/or fractured.

The suction cup is supposed to be placed in a certain position as is described in the diagram below:

WHERE TO PUT THE CUP



Leave the cup on long enough for caput to be formed inside it before you start pulling

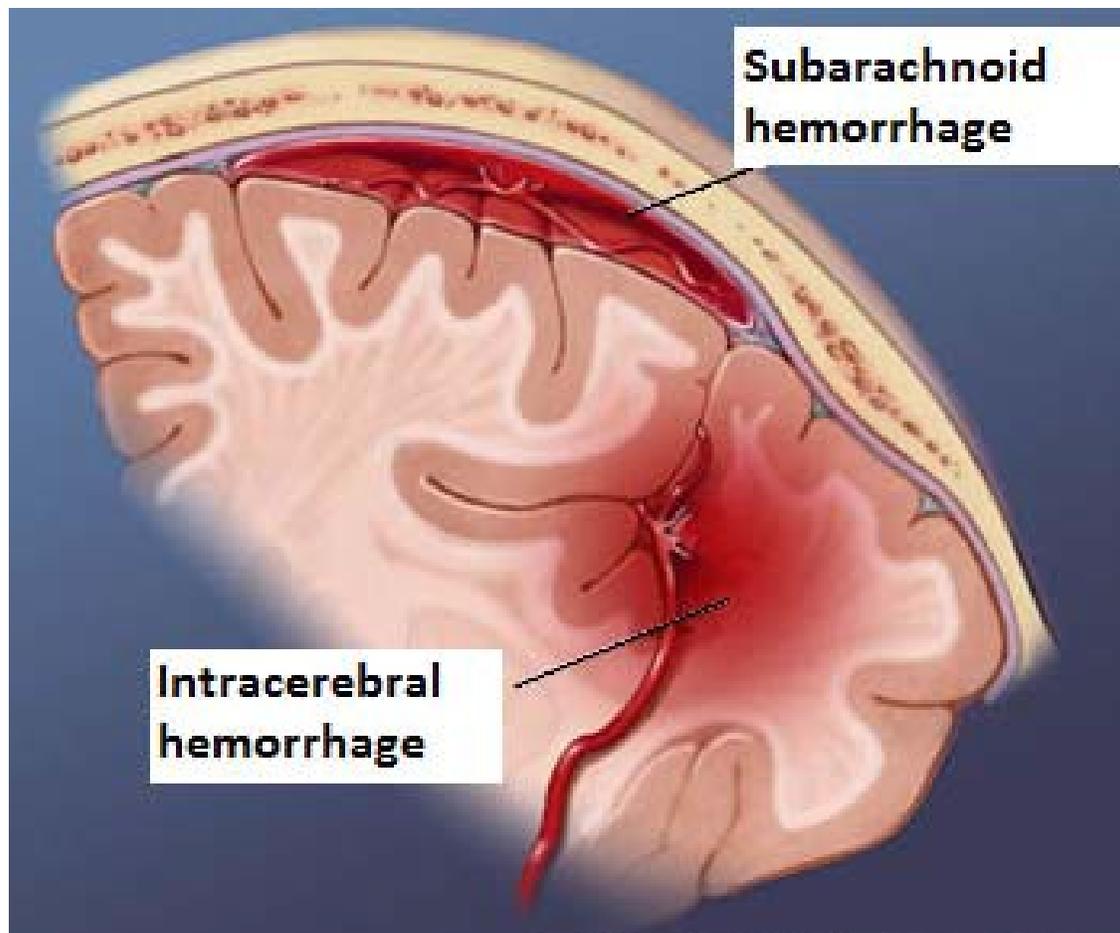
The placement of the suction cup just anterior to the posterior fontanel assures that the

smallest diameter of the head is passed through the birth canal or incision, ensuring the easiest and safest passage of the head. Second, since the cephalohematoma develops beneath where the suction cup was placed, the cephalohematoma serves as evidence of where the cup was placed and whether it was placed correctly or not.

In connection with vaginal delivery or caesarean delivery assisted by vacuum extractor, there are several areas of potential deviation:

1. Lack of informed consent.
2. The suction cup was inflated to a pressure higher than recommended. This is very difficult to prove since that obstetrician is usually the one who notes in the chart the pressure to which the suction cup was set.
3. The suction cup was placed in the wrong location, as evidenced by the location of the cephalohematoma

Any of the above alone or in combination can result in brain injury, usually comprised of subdural hematoma, cerebral hematoma and/or fractured skull, as is shown by the following diagram:



Again, the bleeding is the result of the tremendous pressures that can be applied to this skull when the vacuum extractor is not used appropriately. In addition, with caesarean delivery the additional risk exists that because the head is only being passed through the relatively short incision rather than the longer birth canal in a vaginal delivery, the suction cup may not pop off the head before damage can occur.

Finally, it is important to obtain birth photos of the baby from the parents or other family members that depict the location of the cephalohematoma. The photos can be crucial evidence that the vacuum extractor was used inappropriately.