

More attacks on caesarean deliveries

Caesarean births increased by 300 percent during the past decade, so medical researchers are asking why and attempting to determine when caesareans should be performed instead of vaginal deliveries.

There are four major reasons for the rise in caesareans, Mortimer G. Rosen, professor of obstetrics and gynecology at Case Western Reserve University in Cleveland and head of a National Institutes of Health task force studying the subject, reported last week before the First International Symposium on Computers in Perinatal Medicine in Cleveland. (The task force was made up of 19 doctors, researchers, lawyers, ethicists and consumers and reported some of their findings last fall as well.) The four reasons are:

- Repeat caesareans. The more caesareans physicians perform, the more they repeat them. Ninety-nine percent of women who have had C-sections will be delivered by one again.
- Abnormal labor (difficult delivery). One-third of the rise in primary caesareans is due to the notion that women are having more labor problems than they used to, perhaps because fetuses today are better nourished, and hence larger, than they used to be.
- Fetal distress.
- Breech delivery, in which the fetus is positioned in the womb to be delivered bottom, rather than the usual head, first.

All four reasons together explain 80 percent of the caesareans being performed today, the task force concluded.

Similar explanations for the dramatic rise in caesareans during the past decade were reported a year ago by Helen I. Marieskind, a Seattle health administrator who had done a study on the rising caesarean rates for the Department of Health, Education and Welfare. But some other explanations emerged from her study as well—for instance, obstetricians performing C-sections to avoid mothers' suing them for the delivery of a less-than-perfect baby (yet health insurance data reveal that more malpractice claims are filed for C-sections than for failure to perform C-sections); obstetricians doing C-sections rather than vaginal deliveries because the former earn them more money; obstetricians performing caesareans to spare fetuses from passing through herpesvirus-infected birth canals. Genital herpes is a venereal disease that is increasing in prevalence, and if a fetus passes through a herpes-infected birth canal, it can die or suffer serious neurological damage (SN: 4/12/75, p. 242).

So when should caesareans be performed? Some answers are starting to emerge—for instance, those reported by Calvin J. Hobel of the Harbor/University of California at Los Angeles Medical Center

in Torrance at last week's symposium. Hobel and his colleagues determined whether a vaginal delivery or a caesarean is best suited for women who have had a previous caesarean birth by comparing the outcomes of women who delivered vaginally after a previous C-section with those who delivered by a repeat caesarean. There was no difference in the health of newborns born vaginally after a previous C-section from the health of newborns born by a repeat C-section, Hobel reports. What's more, there was a substantial increase in infection among women having repeat C-sections compared with those who had a previous C-section but were now delivering vaginally. The risk of infection was particularly great among women who had unscheduled repeat caesareans. And finally, the length of hospital stay was greater among women having repeat C-sections than among women who had had a previous C-section but were now delivering vaginally.

The practical implications of these results, Hobel explains, are that vaginal delivery after a previous caesarean is generally as safe for newborns as is a repeat C-section, and it is generally even safer for

mothers than is the latter. Because a vaginal delivery requires a shorter hospital stay than a repeat C-section, it is also cheaper. However, not all women should be spared repeat caesareans, Hobel cautions—not those who had previous obstetrical complications that require another C-section. But those women, he asserts, should then be scheduled for a caesarean ahead of time to avoid the heightened risk of maternal infection.

Still other recommendations on when a C-section should or should not be performed were reported by the NIH task force last fall. Notably, women who have had one C-section should be given the option of a vaginal delivery whenever possible during subsequent deliveries. Abnormal labor should be corrected whenever possible—the mother should move around, sleep for brief periods or take medication, rather than rushing in with a C-section to overcome the problem. A vaginal delivery should even be performed on breech babies when they are in certain positions, weigh eight pounds or less, if the mother's pelvis is normal and if the obstetrician is experienced with such deliveries (SN: 10/4/80, p. 215). □

Designer genes down on the farm

Two consulting firms recently had some good news and some bad news about the role of genetic engineering in agriculture. The good news, according to a report prepared by Policy Research Corp. (PRC) and The Chicago Group, Inc., of Illinois, is that a \$50 to \$100 billion a year global market could result from applications of gene-splicing technology to agriculture. The bad news is that gene-splicing technology thus far has largely neglected the agricultural sector in favor of medical applications—the production of insulin (SN: 9/16/78, p. 195) and interferon (SN: 6/14/80, p. 372), for example. In fact, while federal support of agricultural-related gene-splicing research was only \$6 million a year as of November 1980, \$24.5 million was devoted to purely medical-related genetic engineering research and more than \$27.5 million to general gene-splicing research.

These are the conclusions of *An Assessment of the Global Potential of Genetic Engineering in the Agribusiness Sector*, a 457-page volume that the two Chicago firms are selling for \$1,250 per copy. The report, based on interviews and an extensive literature search, is selling to foreign governments, major food, chemical and cereal companies and investment firms. And, says Chicago Group president Lester Teichner, although its aim is to consider the business of agri-genes, the report does neatly summarize various scientific applications of agricultural gene-designing.

For example, spliced genes could be used to manufacture various animal proteins of commercial value. Basically,

gene-splicing involves grafting artificial genes onto natural DNA sequences to force cells to make proteins that would not ordinarily be made. Such spliced genes could be used to manufacture rennin—an “endangered” protein species used in cheese-making. “Calves’ stomachs have been the source of rennin for cheese-making, but the declining number of slaughtered calves has led to a rennin shortage,” the PRC/Chicago Group report explains.

In addition, genetic engineering could aid in the development of viral and bacterial agents that selectively attack pests and ignore valuable crops, yeast that do not lose efficiency as alcohol concentration increases in the fermentation process and plants that can fix—or incorporate in essential amino acids—nitrogen without the aid of nitrogen-fixing bacteria. Another potential application is in the development of salt-resistant plant species. “About 500 million out of the 3,500 million acres of the world's arable land are irrigated,” the PRC/Chicago report states, and that land “regularly accumulates salt from evaporation.” Applying gene-splicing technology to the salinization problem would involve controlling plant genes that regulate osmosis—the process by which water always moves through membranes to an area with higher salt concentration.

All of these potential commercial applications add up to a sizable gene-splicing agribusiness, Teichner says. “We tried to err on the conservative and to not go wacko making predictions,” he says. “This is going to be a big business.” □