gross malformations such as cleft palate (8 of 10 animals), or dysmelia affecting the forelimbs or hind limbs. Figure 3 illustrates a rat fetus with dysmelia of the left forelimb. Also, the abdominal wall of this fetus was thinner than that of control animals.

Neither the high incidence nor the extent of fetal complication following amniocentesis in animals has been observed in the human. Factors relating to differences in teratogenic effect of amniocentesis between animals and man include:

- Species differences in reacting toward potential teratogenic factors
- Species differences in anatomy of uterus, placenta and chorionic membrane
- Differences in the amniotic water volume
- Differences in adhesion potential of amnion to fetus causing deformity
- Differences in gestational age at which amniocentesis was performed

Conclusion

Amniocentesis has provided important data on fetal maturity, sex, and chromosomal abnormalities, and is an invaluable tool for genetic counseling. Neither the incidence nor severity of complications observed in mice and rats following experimental amniocentesis is found among humans. Species differences may account for this discrepancy. However, a need exists for additional clinical information on the risks of amniocentesis considering both the mother and the fetus. Clearly, long-term postpartum follow-up of the infant is needed. Only then can the risk-benefit ratio of the procedure be accurately assessed.

Table 4.—Comparative Results of Amniocentesis in Rats

	CONTROL (Untreated)	TREATED (Amniocentesis)
Number of fetuses	54	54
Aborted	0	43
Intrauterine death	2	0
Viable fetuses at birth	52	11
Visible malformation	0	10

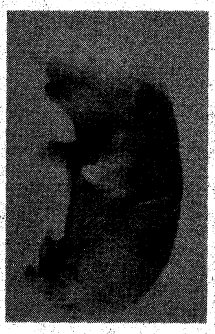

Fig. 3.—Rat fetus from uterine horn subjected to amniocentesis; dysmelia of the left forelimb is apparent.

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