



FIGURE 2. Epidermoid carcinoma bulging into lumen of trachea (left) and invading between two tracheal cartilages (center) to infiltrate wall of trachea (right). In the wall, the tumor is seen as a scirrhous growth. 176 days after start of intratracheal injections of benzo[a]pyrene and chrysotile. 100x.

structed by a $3 \times 2 \times 2$ mm. mass. Microscopically, the tumor in the trachea proved to be a papillary adenocarcinoma (FIGURE 1), and the tumor in the bronchus was an epidermoid carcinoma.

Two hamsters were sacrificed at 190 days, and the last individual in this group at 214 days. All seemed in excellent condition at the time of sacrifice. No tumors were found in the two killed at 190 days, but in the 214-day animal a $2.5 \times 2 \times 2$ mm. epidermoid carcinoma obstructed the right bronchus.

Group 2. Benzo[a]pyrene plus chrysotile. Three animals died without tumors at 1, 98, and 108 days respectively. On the 173rd day, a hamster was found dead with pneumonia of the right lung and an epidermoid carcinoma in the right bronchus.

On the 176th day, a hamster was observed to show rapid, labored respiration. He had lost 22 grams in weight in the preceding week. He was sacrificed. The trachea was constricted by a $5 \times 4 \times 3$ mm. mass which had encircled it and invaded its wall as shown by a cut surface which disclosed four tracheal cartilages buried in the tumor. Microscopically, this was a scirrhous epidermoid carcinoma that formed lamellated keratin. In the same animal, a $1.5 \times 1 \times 0.5$ mm. broad-based translucent gray mound was seen under the dissecting microscope to be seated on the wall of the right bronchus. This proved to be a less differentiated epidermoid carcinoma.

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FIGURE 3. Pa into lumen. 190 and chrysotile. 1

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