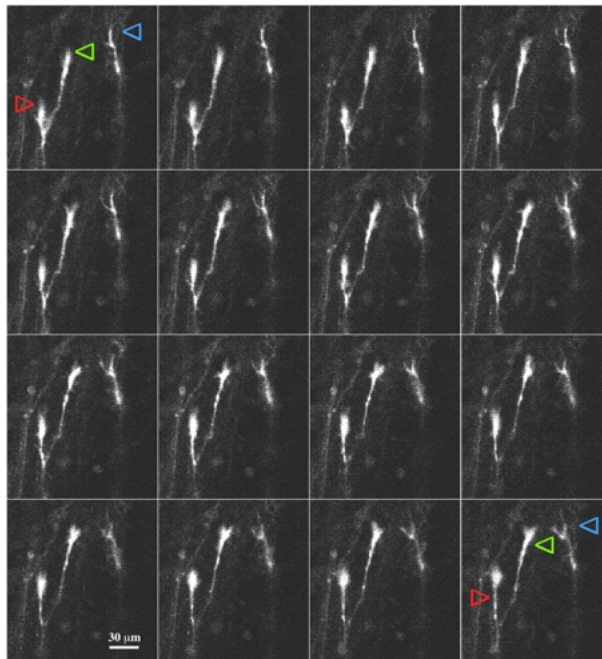


**FIGURE 18-5** Photomicrograph of a thalamocortical slice obtained under transillumination. The red box indicates identification of the area of interest to be subsequently imaged. CX, cortex; T, thalamus; S, striatum. The arrow indicates the trajectory of thalamic axons as they exit the thalamus, traverse the striatum, and head towards their cortical targets.



**FIGURE 18-7** Time-lapse sequence of three growth cones located at the same focal plane within the region of interest (their relative positions compared with Figure 3 have changed in the 90 minutes since the previous image was acquired). Each panel is a single confocal image collected at 90 s intervals. Arrowheads indicate the position of the leading tip of the axons at the onset of the imaging session. It can be seen that for the duration of the experiment illustrated here, the growth cone at the right-hand corner of each panel does not advance at all (blue arrowhead), whereas the other two move forward by 18  $\mu\text{m}$  (green arrowhead) and 30  $\mu\text{m}$  (red arrowhead), respectively. Interestingly, the first axon, which had been “static” for about 6 hours, later began a vigorous forward extension (Skalióra et al., 2000). An animated version of the static growth cone can be found at <http://nucleus.med.upatras.gr/hsn/>. Such comparisons are useful because they indicate that the reduction or even the arrest of extension is part of the normal growth process and does not in itself indicate a damaged or unhealthy axon.