It has been noted that the frequency of the diagnosis of the oat cell type of SCC is strikingly high in postmortem compared with biopsy specimens, and that there are no significant clinical, biological, or ultrastructural differences between the two types. Based on these observations, the recent proposal that the term "oat cells" and "intermediate cells" should be deleted from the subtypings of SCC seems quite reasonable in light of evidence suggesting that oat cells may be the result of autolysis of intermediate cells of SCC. Autolysis prevents proper fixation and interpretation. Larger surgical specimens, as Start et al suggest, may have varying degrees of autolysis before their arrival at the pathology laboratory. I therefore recommend that with larger surgical specimens, intraoperative samples should be obtained for subsequent proper fixation and interpretation whenever possible.

Incidentally, properly fixed, well preserved specimens could eventually eliminate certain descriptive terms, such as clear cell variant, often used in various tumour classifications, because such phenotypic variations may arise attributable to differences in the quality of tissue preservation, as in SCC.

Intraoperative specimen (fig 1) and postoperative specimen (fig 2).

Dr Start comments: Dr Kudo describes an interesting example of how inadequate primary fixation may compromise histological interpretation. Prompt fixation should prevent autolysis and bacterial contamination but it is important to remember that changes in tissue volume and a variety of artefacts may still occur. Delayed fixation affects the amount of observable mitotic figures in tissues, and so may influence systems of mitosis counting that are used in the diagnosis of malignancy in uterine smooth muscle tumours and to provide prognostic indices in other tumours. Fixatives may also directly influence the immunoreactivity of tissue antigens. Such observations show that accurate histological interpretation may come to depend on detailed knowledge of tissue fixation and preparation.

Dr Kudo's suggestion that intraoperative biopsy specimens should always be taken from larger specimens should be strongly discouraged in the absence of a definite clinical or diagnostic indication. In addition to producing unnecessary specimens, sampling errors may arise and more important, any manipulation of specimens may create distortion and complicate or compromise the subsequent pathological assessment. In our experience the quality of fixation is best improved by better education of all relevant staff including surgeons, when combined with the rapid transfer of specimens to the laboratory where fixation can be optimised. Proper fixation is important.