13 An in vitro study on the temperature sensitivity of small cell carcinoma of the uterine cervix. T.Shimoda, K.Kuramoto, H.Hata, M.Hamano, M.Maeda and M.Nishijima, Dept.Obst.and Gynec., Kitasato Univ.Sch.Med., Kanagawa.

For the purpose of investigating the possibility of hyperthermic therapy against small cell carcinoma of the uterine cervix, an in vitro study was performed by using a strictly controlled temperature gradient incubator (T.G.I.). The cultured cells(HCSC-1) were placed into various temperatures for 8 days and inhibitory effect of some tumor-markers into media were chronologically investigated as well as morphological survey. 1) When the cells were cultured at 37.9-38.5°C, the growth was nearly as same as that of the cells cultured at 37°C(control). 2) Cells decreased to 31% at 39.8-40.3°C, although they kept growing. 3) At 40.5-40.6°C, cellular growth was markedly inhibited. 4) These data suggest that temperature upper-limit for proliferation(TLP) is 40.3-40.4°C and temperature upper-limit for viability(TLV) is 40.5-40.6°C which show the carcinoma is more temperature-resistant than adenocarcinoma. 5) CEA titer in media was higher than that of control at 37.9-42.1°C. 6) NSE secretion was enhanced in early phase, but was suppressed with the progress of the growth inhibition. 7) Morphologically elongation of cellular process simulating neuron and increase of cytoplasm were seen by hyperthermic treatment.

14 Synergistic enhancement of growth-promoting activity in extract from uterine cancers by phorbol ester and diacylglycerol through activation of protein kinase C in endometrial fibroblasts. K.Matsunami, A.Imai, T.Tamaya, Dept. Obstet. and Gynecol., Gifu Univ. Sch. of Med., Gifu.

Uterine cervical and corpus cancers synthesize and secrete the putative peptide mitogen, which stimulates DNA synthesis of human endometrial fibroblasts through a mechanism independent on phosphoinositide (PI) turnover. Concomitant exposure of the cells to thrombin or FGF , which induce PI breakdown, led to 2-fold enhancement of maximal activity in the extract-stimulated DNA synthesis. This might imply that they acted at a stage after the mitogen in extract and specific receptor interaction. Insulin or EGF failed to augment the activity in the extract. The stimulatory action of thrombin or FGF was mimicked by direct protein kinase C activators, suggesting that both types of ligand share a similar signaling cascade of action, activation of protein kinase C. These results demonstrated that the growth-promoting activity in uterine cancer extract could be enhanced only by the agents which promote PI metabolism through activation of protein kinase C. These findings could give new insight into pathophysiology of interaction between malignant cells and their stromal cells.

15 The relation between granulocyte elastase and urinary type plasminogen activator in uterine cervical cancer. S.Fujishiro, H.kobayashi, N.Kanayama, T.Terao, Dept.Obst.and Gynec., Hamamatsu Univ.sch.Med., Shizuoka

It is known that urinary type plasminogen activater(uPA) is closely related to invasion and metastasis of cancer. We found that elastase inactivate and degrade pro-uPA. Thus we studied by immunohistochemistry the relation between localization of uPA, elastase and metastasis in cervical cancer. we investigated 29 patients of cervical cancer, clinical stage Ⅱ and collected cancer tissues at the operations. Staining of uPA and elastase was performed by APAAP method. uPA was stained in cancer cells with metastasis more intensively than in those without metastasis. In contrast, elastase was stained in cancer tissues without metastasis more intensively than in those with metastasis. These results supported the mechanism histopathologically that elastase inactivate pro-uPA and diminish tumor cell mechanism and invasion.