complications set by the ROC curves, the suitable cut-off values of Goddard score and LAA% were estimated to be 1 and 0.7%, respectively. Postoperative respiratory complications were observed in 32% of the patients with Goddard score ≥ 1 and 25% of the patients with LAA% ≥ 0.7. On ultivariate analyses, Goddard score or LAA% was significantly correlated with postoperative respiratory complications in each analysis ($p < 0.001$ and $p = 0.016$, respectively).

Conclusions : Goddard score and %LAA measured using 3D-CT were more powerful predictors of postoperative pulmonary complications than FEV1% or any other factors. High-quality 3D-CT enables surgeons to construct the model of respiratory function analysis and plays important roles in not only surgical simulations but also the prediction of short-term surgical outcomes.

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P2-36.

3D analysis of apparent diffusion coefficient histograms in hepatocellular carcinoma : correlation with histological grade

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Background : To evaluate the usefulness of differentiation of histological grade in hepatocellular carcinoma（HCC）using three-dimensional（3D）analysis of apparent diffusion coefficient（ADC）histograms retrospectively.

Methods : The subjects consisted of 53 patients with 56 HCCs. The subjects included 12 welldifferentiated, 35 moderately differentiated, and nine poorly differentiated HCCs. Diffusion-weighted imaging（b-values of 100 and 800 s/mm^2）were obtained within 3 months before surgery. Regions of interest（ROIs）covered the entire tumor. The data acquired from each slice were summated to derive voxel-by-voxel ADCs for the entire tumor. The following parameters were derived from the ADC histogram : mean, standard deviation, minimum, maximum, mode, percentiles（5th, 10th, 25th, 50th, 75th, and 90th）, skew, and kurtosis. These parameters were analyzed according to histological grade.

Results : A weak correlation was observed in minimum ADC and 5th percentile for each histological grade（$r = -0.340$ and $r = -0.268$, respectively）. Minimum ADC showed significant differences among tumor histological grades（$P = 0.009$）. The minimum ADC of poorly differentiated HCC was significantly lower than that of combined well and moderately differentiated HCC（$P = 0.001$）. The sensitivity and specificity, when a minimum ADC of 400×10^{-6} mm^2/s or lower was considered to be poorly differentiated HCC, were 100 and 54%, respectively.

Conclusion : Minimum ADC was most useful to differentiate poorly differentiated HCC in 3D analysis of ADC histograms.

P2-37.

^{18}F-FDG -PET/CT 検査と生物学的特性の相関における口腔扁平上皮癌の悪性度と予後を検討する

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【目的】 口腔がん治療において、PET/CT 検査は病期診断、治療効果判定、再発転移診断に関して今や欠かすことのできない検査のひとつである。今回われわれは ^{18}F-FDG -PET/CT（以下 PET）の SUVmax 値と、口腔がんの進行度因子や生物学的特性および予後の相関について検討した。

【対象と方法】 2010 年 1 月から 2013 年 12 月までの間に東京医科大学病院歯科口腔外科・矯正歯科を受診し、病理組織学的に扁平上皮癌と診断された、臨床的腫瘍径（長径）が 1 cm 以上の新鮮例であった症例のうち、術前に同一施設で PET 検査が施行され、初回治療として手術治療がなされた 52 例を対象とした。生物学的因子として組織学的グレード、