Background and Aims: \(^{18}\)F-FDG Positron emission tomography (PET) has a role in detection of metastasis from primary hepatocellular carcinoma (HCC). But, It is still uncertain whether FDG-PET can replace chest CT and bone scintigraphy to find out lung or bone metastasis. This study aimed to compare the efficacy of FDG-PET, 64-row multi-detector CT (MDCT) and bone scintigraphy for the detection of lung and bone metastasis from HCC. Materials and Methods: 234 patients with HCC were performed FDG-PET at Soon Chun Hyang university Bucheon hospital From Sep. 2005 to Dec. 2009. Among these patients, 143 patients also had an examination of MDCT for chest and bone scintigraphy. Total 43 patients were diagnosed lung and bone metastases with histopathological study, MDCT for chest, or bone scintigraphy. FDG-PET images were compared with above findings, respectively. Results: 43 patients consisted of 28 patients of lung metastasis and 12 patients of bone metastasis and 3 patient of both lung and bone metastasis. The sensitivity and specificity for detection of lung metastasis were 87.1%, 98.2% for FDG-PET and 93.5%, 97.3% for MDCT. Those values for detection of bone metastasis were 93.3%, 99.2% for FDG-PET and 66.7%, 97.6% for bone scintigraphy. The area under receiver operating characteristic curves (AUC) of FDG-PET for detecting lung and bone metastasis was 0.932 (95% CI: 0.877 to 0.967). The AUC of MDCT and bone scan was 0.950 (95% CI: 0.900 to 0.979). There is no significant difference between them (\(p=0.584\)). Conclusions: This study suggested that FDG-PET could be a substitute for chest CT and bone scan in the evaluation of lung and bone metastasis from HCC.