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The comparision of DVH between multiple arc FSRT and conformal FSRT

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INTRODUCTION

To evaluate FSRT planning, we compared dose volume histogram(DVH) of multiple arc FSRT and conformal FSRT by tumor shape.

METHOD

In chungnam university hospital, the twenty-five patients were treated with FSRT from August 1997 to April 1999. We used multiple arc FSRT or conformal FSRT according to irregular factor(I.F.) defined as the ratio of tumor volume and surface area. We had considered multiple arc FSRT if tumor shape was similar to sphere or the value of I.F. was less than 1.25. We had considered conformal FSRT if tumor shape was very irregular or I.F was more than 1.3. To verify the error between target and isocenter, we used to take anterior-posterior (AP), lateral(Lat) radiography before treatment session. For evaluation of treatment planning, we reviewed the maximum DVH value for tumor volume and the minimum DVH value for critical organs.

RESULTS

The errors between target and isocenter on AP, Lat radiography were less than 1mm. We used 3-8 arcs for multiple arc FSRT, 5-6 ports for conformal FSRT. The mean DVH value of tumor volume in multiple arc FSRT and conformal FSRT was 90%, 83%, respectively. The dose of critical organs was less than 5% of maximun dose.

CONCLUSION

We had obtained the similar DVH value between multiple arc FSRT and conformal FSRT as a result of FSRT planning after we chose multiple arc FSRT or conformal FSRT by tumor shape. We are going to expect proper FSRT planning of sphere shape tumor and irregular shape tumor.