The Examination of Several New Therapeutic Methods in Multidisciplinary Treatment.

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Introduction
Invasive surgery used to be the main technique for the treatment of head and neck malignant tumors. However, surgery in head and neck region tends to leave serious dysfunctions or cosmetic disorders. There are important organs included in this area, therefore invasive surgery is extremely disadvantageous in items of the patients returning to society. To work out these problems the new multidisciplinary treatment combined with the new therapeutic methods and the traditional therapeutic methods ie. Chemotherapy, radiotherapy and immunotherapy is thought to be effective. To perform this multidisciplinary treatment, it is very important that the characteristics of each therapeutic methods are sufficiently examined.

Methods
We adopted cryosurgery from 1968 (511 cases of head and neck malignant tumors), CO₂ laser and Nd-YAG laser from 1979 (187 cases), ultrasonic aspiration surgery from 1979 (26 cases) and hyperthermia from 1980 (45 cases). 152 cases of head and neck malignant tumors have been treated for the purpose of radical cure by this multidisciplinary treatment. From these experiences we compared these methods about several items and we examined macro and microscopically dog tongues which operated by cryosurgery, CO₂ laser and Nd-YAG laser surgery, ultrasonic aspiration surgery, bipolar coagulator and infrared coagulator.

Results
CO₂ laser has the best capacity as of scalpel. Bleeding during operation is minimum in cryosurgery. Bipolar coagulator shows the best ability for hemostatic capacity. CO₂ laser, Nd-YAG laser surgery can easily accelerate the volume of the tumor reduction. Nd-YAG laser light can be conducted many regions of body through optical fiber in comparison with other methods. Hyperthermia can be applied theoretically all areas of human body. Cryosurgery and hyperthermia show minimum reactions during treatment. But after
operation CO\textsubscript{2} laser surgery produces far less pain. Ultrasonic aspiration surgery is the most safety when used in the vicinity of important organs and tissues. In macro and microscopical observation of dog tongues, almost same results were obtained as the clinical examination. (Table 1)

Conclusion

After understanding these characteristics of these new therapeutic methods and the traditional therapeutic methods, we could adopt the most reasonable methods to the most proper region at the most proper time according to the patient's physical and psychosomatic condition in this multidisciplinary treatment. (Fig. 1)

<table>
<thead>
<tr>
<th>Method</th>
<th>Scalpel</th>
<th>Bleeding during operation</th>
<th>Hemostatic Capacity</th>
<th>Efficiency to tissue damage</th>
<th>Conductive Method</th>
<th>Adapted Region</th>
<th>Reaction during operation</th>
<th>Reaction after operation</th>
<th>Side effect for important tissue</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>CO\textsubscript{2} LASER</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Na-YAG LASER</td>
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<td>5</td>
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<tr>
<td>ULTRASONIC ASPIRATION</td>
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</tbody>
</table>

The larger the number is, the more inferior the capacity of the method means. The number one means the best ability.

Multidisciplinary Treatment of Head and Neck Malignant Tumors

\begin{itemize}
  \item Chemotherapy
  \item Radiation therapy
  \item Hyperthermia
\end{itemize}

Multidisciplinary targets:

\begin{itemize}
  \item elimination of tumor, (preservation of life)
  \item return to society (functional and morphological retention)
\end{itemize}

Fig. 1