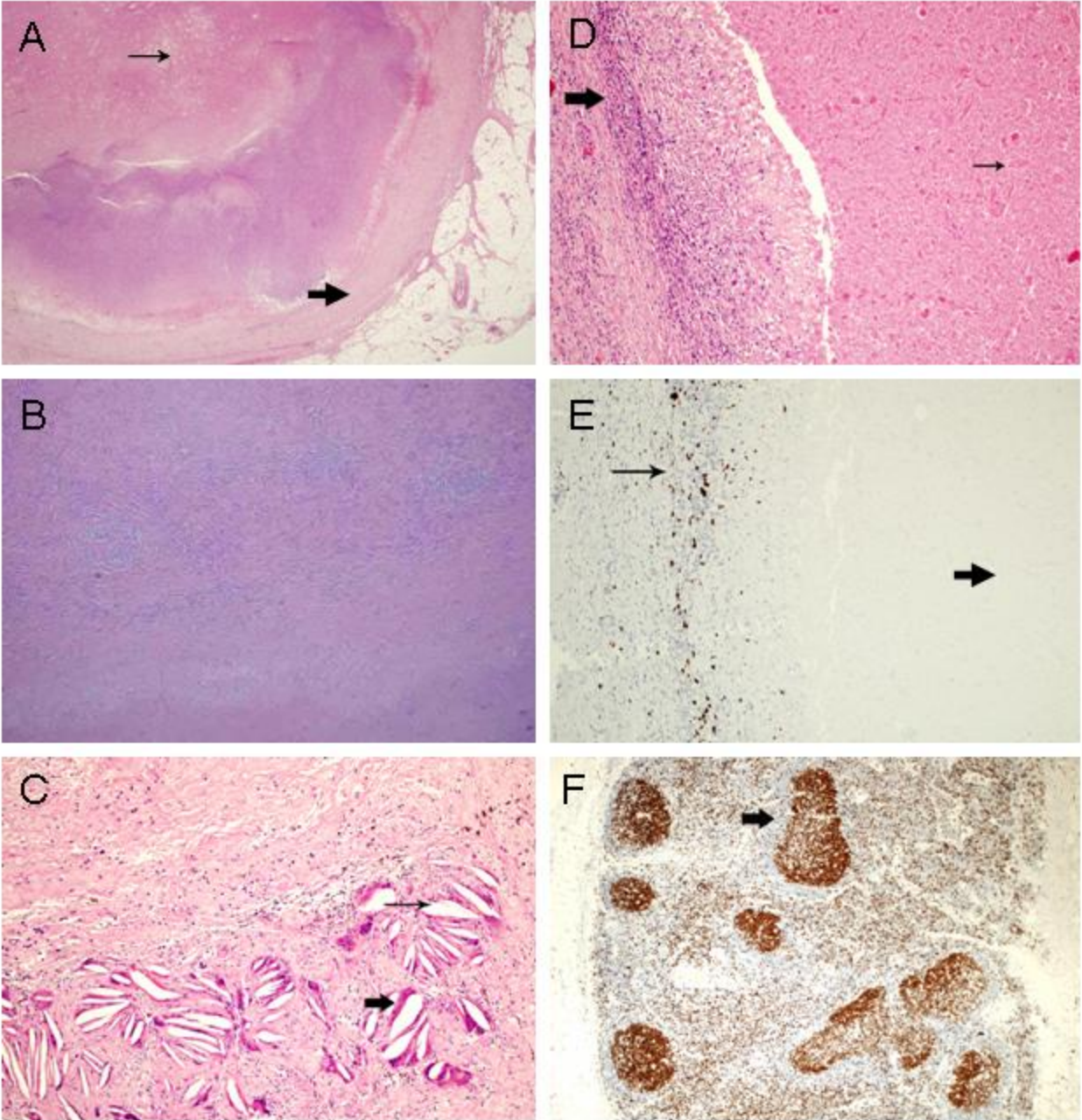
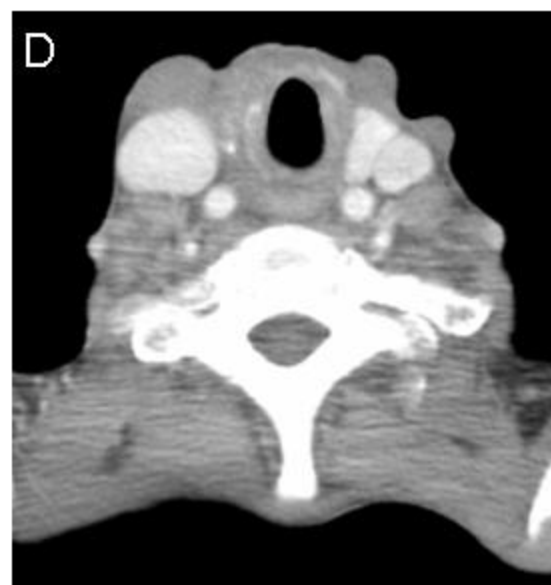
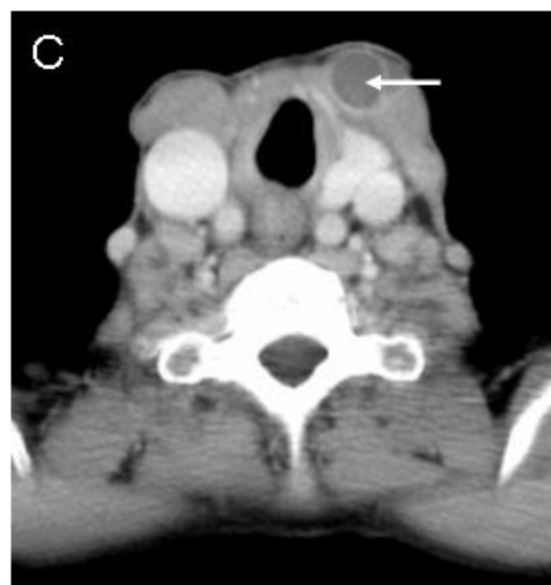
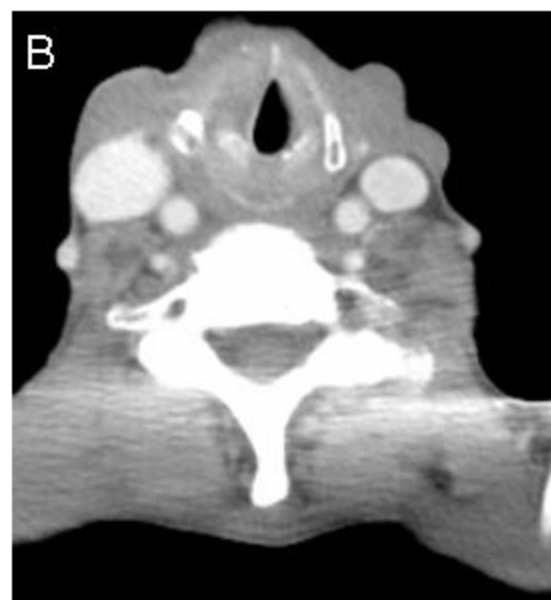
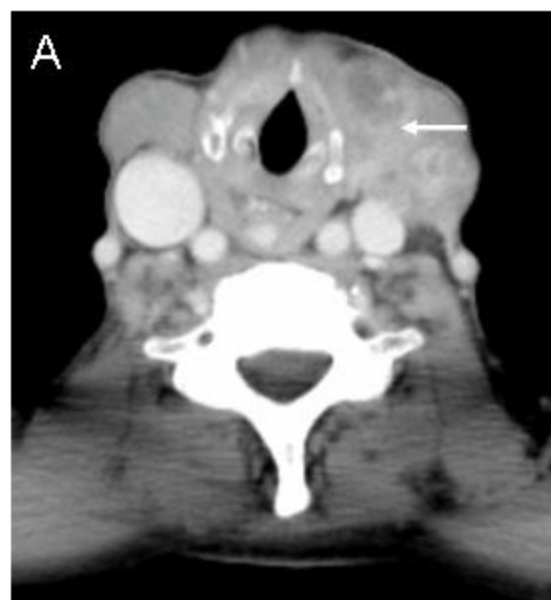


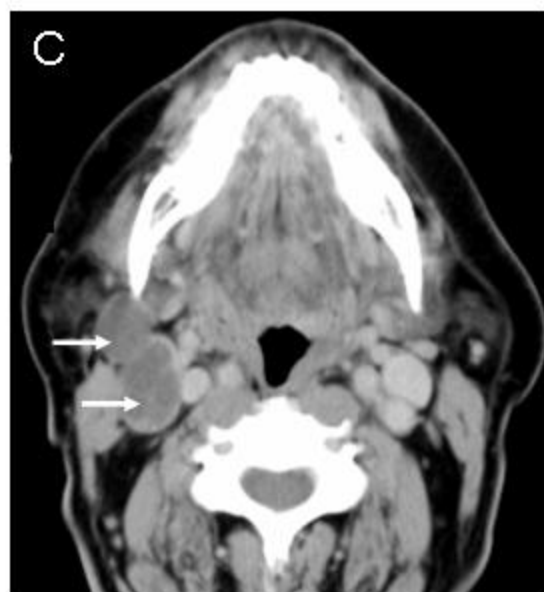
Supplementary Fig. 1



Supplementary Fig. 2A-D



Supplementary Fig. 3A-D



Supplementary Fig. 4A-D

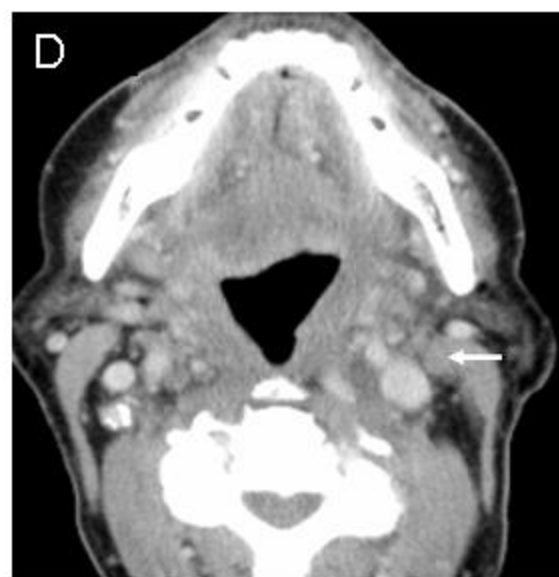
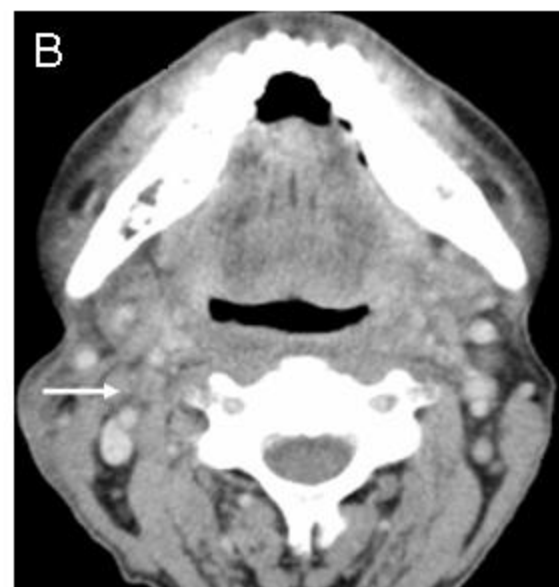


Figure Legends for Supplementary Figures

Supplementary Figure S1. Histopathology and immunohistochemistry from tissue samples obtained at neck dissection. **A.** Lymph node showing complete effacement of nodal architecture with extensive parenchymal necrosis and marked peripheral fibrosis. No viable tumour was seen. (H&E, x12.5). **B.** Lymph node showing confluent necrosis with no viable tumour (H&E, x100). **C.** Lymph node showing fibrosis (top of field), with prominent giant cell reaction (thick arrow) and cholesterol cleft formation (thin arrow) (H&E, x100). **D.** This lymph node shows extensive necrosis with “ghost” tumour cell outlines (thin arrow). No viable tumour remains. A residual rim of lymph node is seen (thick arrow) (H&E, x100). **E.** Ki67 immunohistochemistry of lymph node in D. There is complete absence of Ki67 staining within the necrotic tissue (thick arrow), with moderate staining seen in the residual rim of normal nodal parenchyma (thin arrow) (x100). **F.** Normal lymph node control showing a high cell proliferation rate within germinal centres (arrow) and a moderate proliferation rate elsewhere in the nodal parenchyma (x40).

Supplementary Figure S2. A-D. Pre- and post-treatment CT images of patient 001-0007 in cohort 2. **A, C.** Pre-treatment images showing left level 3 and 4 lymphadenopathy with extensive extranodal extension (white arrows). **B, D.** Complete resolution of disease posttreatment.

Supplementary Figure S3. A-D. Pre- and post-treatment CT images of patient 001-0013 in the expansion cohort. Pre-treatment images showing left level 2 conglomerate nodal mass (**A**) which has shown a partial response to treatment (**B**). Pathological evaluation showed no evidence of viable tumour at neck dissection. **C, D.** Pre- and post-treatment CT images of patient 001-0014 in the expansion cohort. Pre-treatment images showing large right level 2 lymphadenopathy (**C**) which has shown a partial response to treatment (**D**). Pathological evaluation showed no evidence of viable tumour at neck dissection.

Supplementary Figure S4. A-D. Pre- and post-treatment CT images of patient 001-0015 in the expansion cohort. Pre-treatment images showing primary oropharyngeal cancer (thick arrow) and large right level 2 lymphadenopathy (thin arrow) (**A**) which has shown a complete response at the primary site and a partial response in the lymph node following treatment (**B**). Pathological evaluation showed no evidence of viable tumour at neck dissection. **C, D.** Pre- and post-treatment CT images of patient 001-0010 in cohort 3. Pretreatment images showing left oropharyngeal tumour (thick arrow) with left level 2 lymphadenopathy (thin arrow) (**C**) which has shown a complete response at the primary site and a partial response in the lymph node following treatment (**D**). Pathological evaluation showed no evidence of viable tumour at neck dissection