

Association Between Blood Transfusion and Outcomes of Free Flap Head and Neck Cancer Surgery

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Citations

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BACKGROUND

Red Blood Cell Transfusion (RBCT) has been used in surgery for decades with the aim of improving patient survival, but it is not without risk.¹⁻³ Reports of RBCT impacting solid cancer surgical outcomes have been cited in literature^{4,5}, but has not been well reported in head and neck cancer. With an estimated 66,000 newly diagnosed head and neck cancer patients each year,⁶ it is important to explore the potential influence of RBCT on head and neck cancer surgery. Particularly with the use of free flaps since free flaps are often needed in head and neck cancer surgeries.

METHODS

400 patients were included undergoing free flap reconstruction from 2014 to 2020. The primary outcome measures were red blood cell transfusion and volume transfused. Race, sex, flap location and tissue type, pathology, dependent functional status, length of stay, and cancer recurrence were evaluated for association with red blood cell transfusion intraoperatively and/or postoperatively. Transfusions were indicated on patients with Hb <7-8 and/or symptomatic anemia. ANOVA and Chi² statistical analysis were performed. The significance was set at p= <0.05.

RESULTS

Of the 400 patients included, 58 required red blood cell transfusion. Of these 67.8% were males, racial demographics included 9.00% African American, 1.30% Asian, 1.00% Hispanic/Latino, 87.8% White, 1.00% other. African American patients received a higher volume of transfused red blood cells versus white patients (855.00 mL vs. 437.07 mL, p=0.005). Length of stay was significantly associated with red blood cell transfusion (5.95 days vs. 7.22 days, p=<0.001). Dependent functional status and need for red blood cell transfusion were associated (p=0.002). Type of free flap was associated with need for red blood cell transfusion (p=<0.001) with anterolateral thigh flaps being the most common resulting in transfusion (34/58).



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CONCLUSIONS

RBCT was significantly associated with race, dependent functional status and length of stay. More investigation on the reasons for increased RBCT volume in African American individuals should be explored to elucidate the causes. The authors postulate this may be related to problems with access to care. DFS and LOS may be related due to sicker patients being more likely to have DFS and thus requiring complex postoperative care leading to increased LOS. Certain free flaps like ALT flaps have a higher risk of blood transfusion.

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