Idea on Prevention from Postoperative Intraorbital Hematoma in Orbital Surgery

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Abstract The retrobulbar hematoma is a rare complication after orbital surgery. Despite of its rareness, the retrobulbar hematoma may be disastrous to the patient's vision (Chen et al. in *J Craniofac Surg* 20:963–967, 2009). Since 2007, I have applied the combined use of a scalp vein set and a vacuumed blood sampling bottle in all of the orbital surgeries. In my study, I achieved a good result, and I will introduce this simple method as one of alternatives for the prevention from the postoperative intraorbital hematoma including the retrobulbar hematoma.

Keywords Intraorbital hematoma · Vacuumed blood sampling bottle · Scalp vein set

Introduction

The retrobulbar hematoma is a rare complication of orbital surgery, but its consequence may be disastrous to the patient's vision. In this study, I will introduce the combined use of a scalp vein set and a vacuumed blood sampling bottle as one of the alternatives for the prevention from the intraoperative hematoma including the retrobulbar hematoma in the orbital surgery.

Materials and Methods

Since 2007, I have repaired the orbital fractures of 62 patients with various open reduction methods. The

combined use of a scalp vein set and a vacuumed blood sampling bottle (Vacutainer K2 EDTA bottle, 3 ml, Becton & Dickinson, USA) always have been adjusted to all of the orbital surgeries (Fig. 1).

Technique

After the fracture-reduction, I make three holes on the side of silicone tube of a scalp vein set (Fig. 2). Then the silicone tube is placed on the orbital wall that was repaired (Fig. 3). The silicone tube is tagged to the periorbital skin with nylon 6-0 suture material for the prevention from the self removal. After the operation, the needle end of the scalp vein set is connected to the vacuumed blood sampling bottle. The collected intraorbital blood is negatively suctioned from the orbit. The bottle is changed every 6 h or on the time of half-filled on the operation day. From the day after the operation, the bottle is changed on the time of half-filled. If no more blood is drained, the silicone tube is removed.

Results

The average use of the bottle is 2 bottles on operation day, 1 bottle on the day after operation. On the 2nd day after the operation, the silicone tube was removed. The average amount of the drained blood is 4.8 ml. The average amount of the drainage volume is 3 ml on the operation day, 1.5 ml on the day after the operation, and 0.3 ml on the 2nd day. Every patient had no experience of symptom that represents the intraorbital hematoma. The postoperative CT scan was taken for every patient within the 7th day after

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Fig. 1 Positioned view of the scalp vein set tube with 3 side holes

Fig. 2 Magnifying view of side holes on silicone tube end of scalp vein

operation. No intraorbital hematoma or retrobulbar hematoma was observed on the CT scan.

Discussion

The retrobulbar hematoma is a rare complication, but its consequence may be disastrous to the patient's vision [1]. The retrobulbar hematoma can be resulted from blunt trauma [2] or orbital surgery. Before using this method, I have an experience of a postoperative intraorbital hematoma in blow-out fracture case. In the case, I used a silastic drain for the purpose of the prevention from the postoperative hematoma. The patient had symptoms such as proptosis, up-positioned globe, and limitation of eyeball movement. On exploration, I found that much amount of hematoma was existed on the surgical field despite of the silastic drain placement. This represent that the silastic

Fig. 3 Immediate postoperative patient's view with scalp vein set and vacuumed blood sampling bottle

drain does not play a role in the prevention from the postoperative intraorbital hematoma. Since this experience, I have used a combined use of a scalp vein set and a vacuumed blood sampling bottle for the purpose of the prevention from the postoperative intraorbital hematoma in all of orbital surgeries. Up to now there are some studies about the retrobulbar hematoma in the orbital surgery [3, 4]. But I can not find a study about methodological intraoperative prevention from the intraorbital hematoma after the orbital surgery. In this study, I introduce the combined use of a scalp vein set and a vacuumed blood sampling bottle as one of the alternatives for the prevention from the intraoperative hematoma or retrobulbar hematoma in all of the orbital surgeries. This method is as very simple as any operator to get a good result. There is no need of special tool. And the scalp vein set and sampling bottle are easily gotten in the operating room. This simple method satisfies that need adequate.

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