and 71.4% specificity for predicting mortality ($p < 0.001$).

SICH is frequently observed in neurosurgery practice, especially in elderly patients, and it is among the conditions requiring prompt surgical intervention for patients with surgical indications. Parameters such as age, level of consciousness at the time of admission, and hematoma volume are important in making surgical decisions for the patient. The main objective of surgical procedure is to reduce intracranial pressure by performing decompression and to hinder the onset of neurological deficit and, if possible, mortality in the advanced stage.

The clinical presentation of SICH may range from headache to deep coma. However, all patients in our cohort were unconscious when admitted to the hospital and were treated surgically. The level of consciousness (GCS)is a widely used prognostic marker in SICH patients[10]. The prognosis seems to be better in patients with high GCS scores. The rate of mortality among patients with GCS scores of[9–12] was 6.25%, whereas it was 83.7% in those with GCS scores of[3–8]. The overall mortality rate in our study was 60.3%. Our results were similar to previous studies[11].

In SICH patients, there is an association between advanced age and poor prognosis[12]. The mean age of tour cohort was 62.8 years (range, 19–92). Age showed no significant relationship with mortality ($p = 0.211$). Similar to reports in the literature indicating that SICH is more frequently seen in males[13], males (72.4%) outnumbered females (22.6%) in our study population. In the current study, there was no significant relationship between gender and mortality ($p=0.403$).

Among SICH patients, HT is the most common etiology[14]. There were 32 patients with HT in our study group, 23 of whom died. HT is a disease that can be prevented and controlled with regular treatment. We believe that the incidence of SICH may be reduced by meticulous management and stringent follow-up of hypertensive patients and by raising their awareness on issues such as complying with dietary measures and adapting to drug treatment if they use drugs. Particular attention should be paid to the use of antihypertensives, such as nimodipine, which are also known to have effects on the central nervous system[15].

It has been reported that SICH is most commonly located in the basal ganglia (50%–60%)16. Consistent with this study, hematomas were most commonly localized in the deep region in our study (37 patients [69.8%]). Hematomas in the lobar location were observed in[16] patients (30.2%). Deep-seated hematomas have been found associated with higher mortality[17]. However, in our study, although 21 of the 32 deceased patients had a hematoma in the deep region, the location of the hematoma showed no significant association with mortality ($p = 0.412$). This may be related to the small number of patients and/or the exclusion of patients with missing data from the study.

The cranium is a closed box with a fixed volume. The formation of hematoma in this fixed volume region is liable to exert a mass effect on normal tissues over time. As a result, intracranial pressure increases, disrupting cerebral perfusion and causing loss of physiological functions. These events increase the mortality rate. Therefore, the primary aim in SICH is to reduce the pressure on normal brain tissue[18]. Examination of hemorrhage volume of the deceased patients indicated that out of 32 deceased patients, 6 (18.8%) were in the 31–60 cm3 group, 12 (37.5%) in the 61–90 cm3 group, and 14 (43.8%) in the >90 cm3 group. Most of the deceased patients (43.8%) were in the group with a hemorrhage volume of >90 cm3. The results we obtained align with previous reports indicating a positive

association of mortality with increasing hematoma volume[19].

In SICH, hematoma can sometimes open to the ventricle, leading to the blockage of the pathway for the circulation of the cerebrospinal fluid. The consequent development of hydrocephalus leads to poor prognosis. According to the literature, hematomas open to the ventricle in approximately 40% of SICH patients19. In our study, hematoma opened to the ventricle in 43 patients (81.1%), and 30 of these patients died (p = 0.004). Hydrocephalus developed in 16 patients (30%) which was treated by EVD. Thirteen of these were in the deceased patient group (p = 0.041). Our results line up with previous reports in the literature.

Even though SICH patients may have a wide range of presenting symptoms, they are most commonly brought to the emergency room with impaired consciousness by bystanders. SICH needs to be considered in the etiology of patients presenting with impaired consciousness. For this reason, patients presenting with confusion and loss of consciousness should urgently undergo brain CT, and it should be remembered that early intervention may help improve the prognosis.

The limitations of our study are that it was conducted in a single center, retrospectively, and the sample size was relatively small (n = 53). Since postoperative brain CT scans were not available for all patients, relevant comparisons could not be performed. Larger multicenter prospective studies are required to obtain more robust data.

CONCLUSION

In SICH patients, low GCS score at admission, high hematoma volume, and the presence of concomitant HT are associated with poor prognosis.

Ethics Committee Approval: Before starting the study, approval was obtained from the local institutional ethics committee (23-KAEK-124). Owing to the retrospective nature of the study, the ethics committee exempted the need for informed consent.

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