Selective Surgicel packing for the treatment of posterior epistaxis

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Abstract
Rod lens endoscopes provide residents in otolaryngology a means of more accurately identifying the site of bleeding and, when possible, cauterizing the bleeding vessel. Identification of a posterior bleeding point is often difficult and sometimes impossible. Intranasal manipulation for electrocautery is painful, may require general anesthesia, and is associated with complications. We describe a pilot study designed to evaluate selectively packing the bleeding site with Surgicel (oxidized cellulose) to control the hemorrhage without packing the nasal cavity and to reduce patient morbidity and length of stay in the hospital. We describe the technique and present the results of treating 8 patients admitted with acute posterior epistaxis over a 10-month period in 1995-1996.

Introduction
Rod lens endoscopes provide residents in otolaryngology with a means of more accurately identifying the site of bleeding and, when possible, cauterizing the bleeding vessel. Most patients admitted with acute epistaxis have been bleeding profusely and have already been packed by general practitioners and casualty officers. The key to management of a patient with epistaxis is identifying the site of bleeding. Using a rigid endoscope and suction under local anesthetic can facilitate identification of a posterior bleeding point or site.1 Intranasal manipulation for electrocautery is difficult, painful, and associated with complications. The aim of this pilot study is to evaluate the efficacy of selectively packing the bleeding site with Surgicel (oxidized cellulose, Johnson & Johnson Wound Management, Somerville, N.J.) to control the hemorrhage and to reduce morbidity and length of stay in the hospital.

Methodology
Thirty-three patients admitted to Aberdeen Royal Infirmary with acute epistaxis were treated over a period of 10 months during 1995-1996. To assess the bleeding site, endoscopic examination of the nasal cavity was performed under local anesthesia with xylocaine and adrenaline within 12 hours of admission. Endoscopy, performed with a 4-mm, 0°, and 30° rigid endoscope, confirmed posterior bleeding in 8 patients (24%). Of the 8 patients, 7 were men and 1 was a woman. The patients’ mean age was 52.8 years. All patients with anterior epistaxis were excluded from further study.

One patient was admitted with secondary hemorrhage following intranasal antrostomy, but nasal endoscopy confirmed the bleeding as coming from the roof at the posterior part of the nasal septum. A piece of Surgicel 2.5-5 cm × 2.5-5 cm was used to pack over the bleeding site and reinforced with the tip of a rigid endoscope. No other form of packing was used.

When the bleeding was identified as coming from the inferior lateral wall, the Surgicel was tightly packed under the inferior turbinate. If the bleeding was identified as coming from the roof, the Surgicel was tightly packed between the roof of the nasal septum and the middle turbinate. In one patient, the bleeding came from the middle meatus, which was packed with Surgicel. All patients were allowed to go home within 12 hours and scheduled for a follow-up appointment in 3 months. The procedure was explained to patients, and they were informed that the Surgicel might either come out as a black mold or be absorbed. No attempt was made to remove the Surgicel during follow-up visits to the outpatient department. The procedure was regarded as successful if patients experienced no further bleeding within 3 months of leaving the hospital.

Results
Eight patients with posterior epistaxis, 7 men and 1 woman, with a mean age of 52.8 years, were treated by selectively packing only the bleeding site with Surgicel. The cause of bleeding was idiopathic in all 8 patients. One patient was admitted with profuse bleeding 5 days after an antrostomy, but nasal endoscopy confirmed that the bleeding was coming from the roof and was unrelated to the site of surgery. Sites of bleeding were identified as

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inferior lateral (1), middle meatus (3), and roof of the nasal cavity (4) (table).

Following successful treatment, the patients’ average hospital stay was less than 24 hours compared to an average hospital stay following conventional packing of 3.25 days. Patients reported that they could breathe in spite of the packing and experienced no pain.

Only one patient, a 75-year-old man with extensive arteriosclerotic disease and multiple bleeding sites, experienced another episode of epistaxis within 3 months. He responded well to embolization.

Discussion
Epistaxis is one of the most common ENT emergencies and can be of arterial or venous origin. Arterial epistaxis is the result of degenerative disease affecting the tunica media. Shaheen suggested local ischemic changes as a probable cause of epistaxis. The prevalence of epistaxis in a random population is reported to be 10 to 12%. A positive family history is present in 42% of patients. Anterior epistaxis is more common in children or young adults, whereas posterior epistaxis predominates in the older population. Posterior epistaxis accounts for 10% of all nosebleeds.

The initial management of patients presenting with posterior epistaxis involves nasal packing and, if the bleeding persists, balloon catheterization. If the bleeding point can be visualized, endoscopic cautery or arterial ligation can be performed. Various other forms of nonsurgical intervention have been reported in the literature. Stangerup et al tried irrigation with hot water (50°C) as a method of treatment for posterior epistaxis. Comparing this form of treatment with tamponade, hot water irrigation was as effective, was less painful, and reduced hospital stay. Shinkwin et al evaluated the clinical effectiveness of Surgicel, Vasolene gauze, and Merocel as forms of nasal packing. They concluded that Surgicel caused less discomfort both while in situ and on removal in comparison with Vasolene pack and Merocel.

No study of Surgicel packing in patients with posterior epistaxis was found in a literature review. The hemostatic properties of Surgicel are well documented, and it is occasionally used as a hemostatic agent in head and neck surgery to stop bleeding in inaccessible areas that cannot be controlled by diathermy. The author therefore conducted a pilot study to evaluate the efficacy of selective packing with Surgicel in posterior epistaxis, which is usually associated with morbidity and occasional mortality due to the difficulty of localizing the bleeding point and achieving appropriate control by electrocautery or ligation of the offending vessel.

We found that, in most patients, selective packing of the bleeding site with Surgicel successfully controlled posterior epistaxis without packing the whole nasal cavity, a procedure that is associated with morbidity and occasional mortality. Our initial experience with Surgicel in the treatment of posterior epistaxis is very encouraging, and it opens a wide spectrum for its use in nasal pathology and nasal surgery. Although our study included only patients with idiopathic bleeding, Surgicel should be as effective in controlling epistaxis due to facial trauma, coagulation disorders, functional endoscopic sinus surgery, and secondary hemorrhage. If the force of blood threatens to dislodge the Surgicel, temporary anterior packing can be inserted and removed after 2 to 6 hours.

Summary
This pilot study found that selectively packing the bleeding site with Surgicel is an effective technique for controlling idiopathic posterior epistaxis. The author recommends wider use of Surgicel in nasal pathology and intranasal surgery.

References

Table. Anatomical site of bleeding in patients with posterior epistaxis

<table>
<thead>
<tr>
<th>No. patients</th>
<th>Bleeding site</th>
<th>Bleeding vessel</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 (50.0%)</td>
<td>Post. superior nasal septum</td>
<td>Anterior ethmoid</td>
</tr>
<tr>
<td>3 (37.5%)</td>
<td>Middle meatus</td>
<td>Sphenopalatine</td>
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<tr>
<td>1 (12.5%)</td>
<td>Interior meatus</td>
<td>Palatine</td>
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</tbody>
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