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Masterly inactivity in infantile haemangioma: Does it still hold relevance?

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ABSTRACT

Background: Haemangiomas are a source of concern to the parents. It has long been advised to plan a conservative management and counsel the attendants in various literatures owing to the spontaneous regression in these cases. We tried to find out the role of conservative management in our setup. The objective of this study was to assess the effect of conservative management in infantile haemangiomas. **Materials and Methods:** This was a retrospective study from January 2001 to December 2012 including infants with haemangioma in low risk locations. Patients were evaluated at periodic intervals for regression and complications. Interventions done were surgical excision/ cauterisation in cases presenting with complications in the form of bleed or severe ulceration or in residual lesion not responding to the conservative management. **Results:** A total of 104 cases were included. Mean age of the cases at presentation was 32 weeks (range: 6-48 weeks). Mean follow-up was 48 months (range: 9-68 months). Average lesion size at the time of presentation was 4.2 ± 0.5 cm^2 and the average lesion size at last presentation was 1.8 ± 0.5 cm^2. A total of 28 cases presented with complications as bleed, ulceration. These cases were located at extremities and were managed by excision in 13 cases and cauterisation in 15 cases. 13 cases presented with rapid proliferation. Thus, 41 (39.4%) cases presented with complications or rapid progression. Complete regression was seen in 49 cases and remaining 14 (22.2%) cases had some residual lesion. **Conclusions:** Conservative management should be offered only to very small lesions located at concealed sites. Lesions located at extremities and exposed sites should not be considered for conservative management.

Key words: Bleeding, infantile haemangioma, low risk lesion, regression, ulceration

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INTRODUCTION

Presence of a bright red mass in locations of obvious visibility in infants is horrifying and a source of concern to the parents. It has long been advised to plan a conservative management and counsel the attendants in various literatures owing to the spontaneous regression in these cases. There are however certain definite indications demanding therapy in these cases. Various medications have been tried to induce regression in these lesions and oral prednisolone is what which has stood test of time. We tried to find out the role of conservative management in the management of these cases.

The objective of this study was to assess the effect of conservative management in infantile haemangiomas (IHs).

MATERIALS AND METHODS

This was a retrospective study in which the case records of the infants treated at our institute from January 2001 to December 2012 were reviewed. Institute's ethical committee approval was taken for the study. All cases of IHs irrespective of their location were reviewed. High risk locations were defined as lesions located in face especially near eyes, nose occluding vision and breathing, lesions with ulcerations or impending ulcerations, lesions with a history of rapid proliferation or with a dimension more than 5 cm and/or area more than 20 cm^2 whereas all other lesions were considered as low risk. All the low risk cases were managed conservatively and high risk cases were managed by oral prednisolone 5 mg/kg/day[1,2] with or without oral propranolol 3 mg/kg/day.[3] Parents of the infants on conservative management were properly counselled and explained about the possible complications or rapid proliferation. Interventions done were surgical excision/ cauterisation in cases presenting with complications in the form of bleed or severe ulceration or in residual

lesion not responding to the conservative management. Oral prednisolone 5 mg/kg/day with or without oral propranolol 3 mg/kg/day was started in low risk lesions showing very rapid proliferation. Rapid proliferation was defined as an increase in the size of the lesion more than 2 times the original size in <1 week duration. Cases with incomplete data follow-up <1 year, poor patient compliance, any form of previous surgical intervention or mixed lesions were excluded from the study. Data for high risk lesions was also excluded in this study owing to the emphasis on the management of low risk lesions in this study.

For area calculation, measurements were done in the largest dimension and in the direction perpendicular to that. Photographs were taken using standard positioning and lighting at each visit. Patients were evaluated at 3 month, 6 months and then yearly eventually to see regression. Change in dimension, colour and consistency were noted during each visit. Response was marked as the regression observed at the last visit.

Responses in the lesions were graded as no response (<25% regression), partial response (25-50% regression) and good response (>50% regression). Mere change in colour and consistency without change in the dimension of the lesion was considered as partial response.

RESULTS

A total of 173 infants with haemangiomas were managed in our department in the duration from January 2001 to December 2012. Out of them high risk lesions were 69 and 104 cases were standard low risk lesions. Thus 104 cases formed the study group. There were 31 males and 73 females in the study with a male to female ratio of 0.42:1. The sex wise distribution and the mean area of the lesions were as shown in Table 1. Mean age of the cases at presentation was 32 weeks (range: 6-48 weeks). Mean follow-up was 48 months (range: 9-68 months). Average lesion size at the time of presentation was 4.2 ± 0.5 cm^2 and the average lesion size at last presentation was 1.8 ± 0.5 cm^2.

Out of the total of 104 cases 28 cases presented with complications and these were in the form of bleed and ulcerations from the lesion which were managed by excision in 13 cases and cauterization in 15 cases. These cases were those which were located in the exposed sites specially the extremities. About 13 cases presented with rapid proliferation [Figure 1a and b] and these needed to be started on oral prednisolone and all except one responded to the same. Thus out of the total of 104 cases 41 (39.42%) presented with complications or rapid progression. Out of the remaining 63 cases complete regression was seen in 49 cases while remaining 14 (22.22%) cases had some residual lesion [Figure 1] in the form of local discoloration/scar/hyper pigmentation causing parent's concern Table 2.

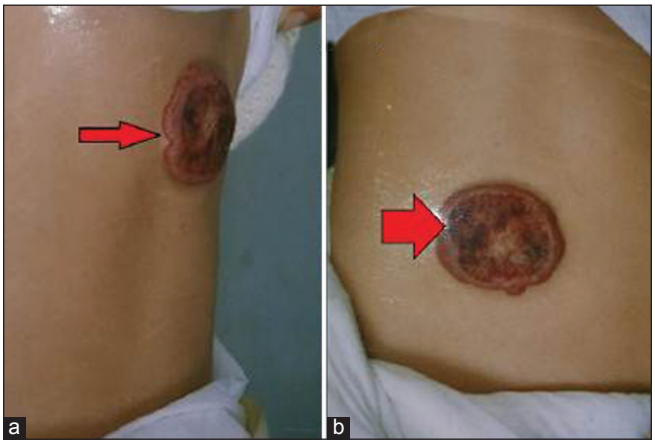

Figure 1: (a): Haemangioma showing rapid proliferation (arrow shows central area amenable to bleed and elevated edges), lateral profile; (b) same lesion seen from anterior

Table 1: Pattern of distribution of the lesions (*n* = 169)

Groups/response	Sex	No. of cases	Age of presentation (in weeks)	Area of lesion (in cm^2)	Duration of therapy (in months)
Low risk (*n*=104)	Male	31	32±9.2	4.2±0.5 cm^2	48 months (range 9-68 months)*
	Female	73	31.5±8.3	4.2±0.4	48 months (range 9-68 months)*
High risk (*n*=69)	Male	48	26.8±5.9	24.7±2.2	14.9±2.7
	Female	21	29.9±5.3	25.1±2.2	13.8±2.9

*Follow-up in months

Table 2: Response in various groups (*n* = 104)

Response/group	Bleed	Ulceration	Complete regression	Rapid progression	Residual lesion
Extremities	9	11	1	6	7
Non exposed areas	1	1	46	2	4
Other exposed areas	3	3	2	5	3
Total	13	15	49	13	14

DISCUSSION

IH is a benign proliferative endothelial lesion. IH is the most common tumour of infancy and is more commonly seen in girls and twins.[4,5] Usually observed male to female ratio is 1:3 world-wide while in India it is 1:2.[2] In our study however it was observed that the males to female ratio was 0.42:1. In most of the literature watchful waiting is what that is recommended for the management of IH. Therapy is indicated in lesions which are obstructing vision or the airway, damaging a critical structure (eyelid, lip and nose) and growing large enough to leave behind significant fibro fatty tissue or excess skin that would require operative intervention. For a small lesion, excision or intralesional steroid administration is recommended while for very large tumour therapy in the form of oral corticosteroids is recommended.[6] Oral corticosteroids have been the mainstay of therapy in growing IH, but dosage recommendations, duration of treatment, recommendations for monitoring during and after treatment and methods of tapering vary widely.[7,8] Various dosage schedules have been described for oral prednisolone which ranges from 1 to 5 mg/kg/day either as daily or alternate day regimen.[1] Propranolol was serendipitously discovered to be effective in the treatment of IH in 2008. In the subsequent years, there has been increasing reports of its efficacy in IH[9-11] and some concerns have been raised regarding potential toxicity. In addition, dosage recommendations have not been firmly established, ranging from lower doses (1-1.5 mg/kg/day) to higher doses, such as 3 mg/kg/day. Holmes *et al*.[9] in their study have reported a halt in progression in 100% of patients and significant regression in 87% of patients with IH treated at 3 mg/kg/day of propranolol.

It has been popularly referred that 50% of tumours show complete involution by age 5 years and 70% by age 7 years respectively.[12,13] This estimate, however, is derived from a 1960 study that focused on small, non-problematic tumours and included lesions other than IH.[14] Unfortunately based on this it is still been recommended that cases of low risk haemangiomas should be managed conservatively. It has always been observed that this is quite difficult and annoying for the concerned parents of the child. Children are quiet active and thus local trauma and ulceration causing exsanguinations are anticipated. As most of the parents of the infants on conservative management were counselled and explained about the possible complications while on conservative management we expected a better result. Despite of such a counselling complication rates were as high as 39.42%, this observation made us to seriously rethink on the conservative management. We also observed that 22.22% of infants ultimately had some residual lesion in the form of scar or hyper pigmentation among those who did not had any complication. These cases ultimately required cosmetic addressal. Thus authors feel that except for concealed small lesion any lesion on the exposed areas or at areas of possible trauma should not be followed. These cases should straight away be managed by surgical intervention rather than being managed conservatively.

CONCLUSIONS

Conservative management should be offered only to very small lesion located at concealed sites. Lesions located at extremities and exposed sites should not be considered for conservative management.

What's New: low risk hemangiomas at extremities are prone to trauma and complication. Despite of proper patient counselling the attendant's anxiety remains unanswered. Many hemangiomas show residual lesion which ultimately needs cosmetic addressal. Thus masterly inactivity in these cases is not advisable.

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