

## PERSONAL PRACTICE

## Press publicity in meningococcal disease

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Publicity in the media about outbreaks of meningitis (including cases more accurately classified as meningococcal disease) has become common during the last few years. Media reports have increasingly been used as a vehicle for providing advice to the general public as a list of the clinical features for parents to watch out for in their child. To be useful this advice must be concise, easy to follow, and should contain accurate clinical information relating directly to the organism causing the outbreak. Unfortunately reports in the media have not always fulfilled these criteria. At best health education opportunities have been lost, and at worst the public have been misinformed. To illustrate this problem we report and draw lessons from an outbreak of meningococcal disease in which information in the media was potentially misleading.

During the outbreak of meningococcal disease in south Cheshire in the four weeks from 13 December 1990 there was considerable media interest. As the initial cases occurred the diagnosis and contact management of each case was discussed between the consultant in communicable disease control (CCDC) and the paediatricians. The CCDC, a member of the department of public health medicine, initiated major outbreak procedures after the admission of the fourth case. On 17 December 1990 a press statement was issued by the CCDC on behalf of the department of public health. Subsequently, articles appeared in the local, regional, national and even international press, and news items were broadcast on regional radio and television describing the outbreak as meningitis. Over the four week period a larger number of patients presented to general practitioners or the accident and emergency department at the district general hospital anxious about symptoms to which they had been alerted by press reports. In most cases these symptoms were of headache and neck pains and were due to minor viral illnesses. Some patients were referred for evaluation by paediatricians, so increasing department workload during a busy winter period. After exclusion of meningococcal disease doctors often found it difficult to re-educate parents about the true symptoms to look for and at the same time reassure them. Conversely, several parents whose children had meningococcal disease expressed anger that they had been misled by media advice about the presenting symptoms.

In this report we compare the clinical features of the cases with the advice given to parents in press publicity. We then discuss the factors that

contributed to the problem, and make recommendations for formulation of better strategies for public health information, including statements to the press during future outbreaks.

**Description of outbreak and press reports**

There were 14 cases of meningococcal disease from the catchment area, notified to the CCDC (GKH). Eleven were admitted to the local district general hospital. The three further cases were notified for the purposes of contact tracing during the outbreak: two came from the boundaries of the catchment area and had been admitted to neighbouring district general hospitals and a third case from the centre of the catchment area had been admitted to a distant district general hospital. Because these three cases were discussed in the press reports they were included in analysis.

Case records were reviewed (by APJT) for details of features of the disease described in the referral letter or admission and progress notes. All 14 children had a clinical diagnosis of meningococcal disease. Eleven were confirmed bacteriologically; the other three were both culture and bacterial antigen negative for *Neisseria meningitidis*, but clinical features were typical of meningococcal disease. There were nine boys and five girls. The age range was 3 months to 13 years (median 3.8 years). Seven children were aged less than 5 years. There were two urban clusters and two sets of sibling coprimary cases (four days and five days apart respectively) that occurred despite prophylaxis being given to the second sibling after diagnosis of the first. Two isolates were rifampicin resistant. Serogrouping showed eight cases were group B, one group C, and five not groupable (including the three in the no isolate category).

All 14 children had evidence of meningococcal septicaemia. Seven children had lumbar punctures; three had evidence of meningitis (white cell counts 34, 80, and  $18\,240 \times 10^9/l$  respectively). The other seven did not: six children were too unstable with fulminant meningococcal septicaemia (defined as a Glasgow Meningococcal Septicaemia Prognostic Score of  $\geq 8$  points in a child with clinical evidence of meningococcal disease<sup>1</sup>), though three had clinical evidence of meningitis; the seventh child had a widespread vasculitic rash but no signs of neck stiffness. Therefore, a total of six cases of the 14 had evidence of meningitis in addition to the septicaemia. Four of the six children with fulminant meningococcal septicaemia died (two from the

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local admissions, two from the admissions to other hospitals).

A press cutting search was undertaken in the International Press Cutting Bureau archives. Cuttings were reviewed and those referring to the outbreak were analysed (APJT). They were divided into four groups by geographical origin. Origins were defined as: *local* if from the Crewe District Health Authority area; *regional* if from a district health authority adjacent to Crewe district health authority, the Mersey region, or Greater Manchester; *extraregional* if from a district health authority beyond 'regional' boundaries; and *national* if published in a newspaper with a national title.

There were 53 press cuttings; 43 referred to the outbreak involving the 14 local cases. The remaining 10 cuttings referred to cases occurring elsewhere and were excluded from further analysis.

The geographical distribution of the 43 cuttings referring to the outbreak is shown in table 1. Twenty nine (67%) of the 43 cuttings were from outside the local area. During the outbreak four national newspapers published reports.

All 43 cuttings described the disease as 'meningitis', only two (4.7%) mentioning septicaemia. Clinical features of meningococcal disease were described as part of advice to the public in 26 of the 43 press reports. Ten of these press reports were from local papers; 15 cuttings were from regional and extraregional sources and one from a national newspaper (see table 1).

Clinical features described in press reports were compared with features found in the 14 children admitted with meningococcal disease (table 2). The six commonest clinical features emphasised in press reports were neck stiffness and headache (both 88%), fever and drowsiness (both 81%), vomiting (69%), and difficulty waking (58%). Photophobia, poor feeding, and confusion were listed in 50% of the press reports. The four commonest clinical features of the 14 cases were fever (100%), vasculitic rash (93% - the 14th child had an unspecified rash), vomiting (64%), and drowsiness (57%). Neck stiffness was present in 36%, as were coma and difficulty waking.

Headache was present in two of the 14 children and mentioned in 23 of 26 press reports ( $p < 0.001$ ). Neck stiffness was found in five of the children and mentioned in 23 of 26 press reports ( $p < 0.005$ ). A vasculitic rash was evident in 13 of the 14 children and mentioned in seven of 26 press reports ( $p < 0.0005$ ). Poor feeding was present in only one of the 14 children but was mentioned in 13 of 26 press reports ( $p < 0.05$ ). Diarrhoea was a symptom in four of the 14 children but was not mentioned in press reports ( $p < 0.05$ ).

#### Commentary and lessons learned

These results reveal a significant discrepancy between the clinical features of the cases and press advice given to the public.

Although all 43 press reports referred to the disease as 'meningitis' this was not so. Only six out of the 14 children had proved or probable meningitis. Instead, all 14 children had features

Table 1 Geographical distribution of the 43 press cuttings referring to the local outbreak of 14 cases of meningococcal disease (left hand column) and geographical distribution of the 26 cuttings that included advice to the public (right hand column)

	No (%)	No (%) with advice on features
Local	14 (32.6)	10 (23.2)
Regional	13 (30.2)	11 (25.6)
Extraregional	12 (27.9)	4 (9.3)
National	4 (9.3)	1 (2.3)
Total	43 (100.0)	26 (60.4)

Table 2 Clinical features of meningococcal disease in 26 press reports (left hand column) and 14 cases (right hand column). Percentages are of column maximum ( $p$  values derived from  $\chi^2$  tests with Yates's correction for small numbers)

Feature	Press reports (%) (n=26)	Cases (%) (n=14)	$p$ Value
Neck stiffness	23 (88)	5 (36)	<0.005
Headache	23 (88)	2 (14)	<0.0001
Fever	21 (81)	14 (100)	NS
Drowsiness	21 (81)	8 (57)	NS
Vomiting	18 (69)	9 (64)	NS
Difficulty waking	15 (58)	5 (36)	NS
Photophobia	13 (50)	2 (14)	NS
Poor feeding	13 (50)	1 (7)	<0.05
Confusion	13 (50)	3 (21)	NS
Irritability	8 (31)	3 (21)	NS
Vasculitic rash	7 (27)	13 (93)	<0.0005
Unspecified rash	3 (12)	1 (7)	NS
Coma	3 (12)	5 (36)	NS
Aches and pains	2 (8)	3 (21)	NS
High pitched cry	1 (4)	1 (7)	NS
Fits	1 (4)	1 (7)	NS
Diarrhoea	0 (0)	4 (29)	<0.05

NS=not significant.

consistent with a diagnosis of meningococcal septicaemia or bacteraemia including six with fulminant meningococcal septicaemia.

Advice given to the public about clinical features to detect was also misleading. The features mentioned in 50% or more of the 26 press reports are features of meningitis. By contrast, clinical features of the 14 cases are those of meningococcal bacteraemia or septicaemia. In particular neck stiffness (5/14) and headache (2/14) were uncommon among the admissions, but were frequently mentioned in press reports (23/26 for both;  $p < 0.005$  and  $< 0.0001$  respectively). Local general practitioners noticed an increase in attendance at surgeries due to anxieties about minor neck pains and headaches, probably as a result of this publicity.

On the other hand, the vasculitic rash was a prominent clinical pointer to the diagnosis in 13 of the 14 children and developed later in the 14th. By contrast, it was mentioned in only seven (27%) of 26 press reports ( $p < 0.0005$ ). The vasculitic petechial and purpuric rash should be treated as pathognomonic of meningococcal disease during an outbreak and deserves emphasis in press reports.

Two other symptoms showed significant differences between their mention in press reports and occurrence in clinical cases. Firstly, poor feeding was mentioned in 13 of 26 press reports but was present in only one of the 14 children ( $p < 0.05$ ). This is a non-specific symptom, but should continue to be listed as a presenting feature of meningococcal disease. Secondly, diarrhoea was present in four of the 14 children but was not mentioned in press reports

( $p < 0.05$ ). Diarrhoea is non-specific and not usually regarded as a presenting symptom of meningococcal disease. Its occurrence in these cases would not be a reason for its inclusion in the list of features in press releases.

The sequential geographical spread of press reports with repetition of similar advice to the general public suggests that the advice in the original press story was syndicated. Sixteen of the 26 press reports that described features of the diseases were published outside the local area. In this way potentially misleading information was disseminated round other health authority areas without input from local CCDCs or public health departments. Misleading advice was also published in a national newspaper. We believe that this spread of a news story may be inevitable, but also that it could be used to disseminate more accurate information in the future.

Doctors are traditionally wary of stories in the media, but doctors may themselves contribute to inaccurate publicity by offering unclear advice to the media and hence the public (and the medical profession). Although at the time it seemed that reasonable steps had been taken to ensure accuracy, the press statement issued by the CCDC on behalf of the department of public health on 17 December 1990 helped contribute to the misleading advice to the public. Before preparation of this press release discussion took place between the CCDC and paediatricians during which the diagnosis was confirmed. However, the clinical presentations of the first four cases and the usual features of meningococcal disease were not discussed in detail.

At the time of this outbreak standard microbiological texts and literature available from the National Meningitis Trust,<sup>2,3</sup> used by the CCDC in the preparation of the press release, emphasised the meningitic presentation of meningococcal disease. Although bloodstream infection was mentioned as a presentation, the pathognomonic vasculitic rash was not. The initial press release was issued before an outbreak control committee met (as may happen in some outbreaks). There was therefore no opportunity to obtain wider agreement on the content of the press release. A draft of the press release was not shown to a consultant paediatrician. When the outbreak control committee did meet a consultant paediatrician was not included in the membership (although a senior clinical medical officer from the community child health department was).

Within 24 hours discussions about the clinical presentation of meningococcal disease had occurred between a consultant paediatrician and the CCDC. As a result, statements to the media from the afternoon of 18 December 1990 onward, when a television interview was given by the CCDC, emphasised the crucial diagnostic value of the vasculitic rash. Despite this the press stories continued to give undue prominence to advice about the meningitic presentation of the disease.

From this we would argue that there is an onus on both clinicians and CCDCs to confer about public health measures to control the disease. The clinician's responsibility does not cease with notification of cases to the CCDC. Statements to

the press should contain accurate, contemporaneous facts. Such facts are in the possession of clinicians, who are also familiar with the usual clinical presentation of meningococcal disease or other diseases. Clinicians should actively advise CCDCs, who come mostly from backgrounds in public health medicine or medical microbiology, with little training in clinical practice of infectious diseases.<sup>4</sup> CCDCs are responsible for coordinating public health measures to control the spread of infectious diseases. The issue of statements to the media which seek to educate the public should be the responsibility of the CCDC. We believe that most CCDCs and most clinicians would not wish clinicians to be the 'lead' press spokesman, except in situations involving highly unusual diseases or single patients. But the CCDC should actively seek information from clinical colleagues to help prepare accurate statements for the media. This collaboration should ideally take place in the setting of an outbreak control committee.

It is our impression that our experience is not unique. We have been aware of numerous examples around the country where media stories about meningococcal disease have wrongly emphasised 'meningitis'. In more general terms, there needs to be a shift away from thinking about meningococcal disease as meningitis. The media tend to overuse the term meningitis and medical advice should not compound this inaccuracy. Diagnostic classification in meningococcal disease is essential because it is the cases with a rash who have the highest mortality risk.<sup>5</sup> Inaccurate classification of disease may have been perpetuated by a number of factors,<sup>6</sup> including the infectious diseases notification system, which only added meningococcal septicaemia without meningitis as a notifiable disease in 1988, cases of meningococcal disease only being notified as meningococcal meningitis up till then. Even now patients with both meningococcal septicaemia and meningitis are recorded by the notification system as having meningitis alone. There was considerable under publicity for the vasculitic rash of meningococcal disease in this outbreak. Fact sheets circulated to all general practitioners by the National Meningitis Trust in October 1990<sup>7</sup> mainly described features of meningitis. The issues raised by this outbreak have subsequently been discussed with the National Meningitis Trust, and in the second edition of their fact sheet,<sup>7</sup> the importance of the vasculitic rash has been further emphasised.

Information about the likely clinical presentation of cases is sometimes difficult to prepare when only one or two cases have been diagnosed but a statement is being sought by the media. Under these circumstances we feel that the septicaemic presentation of the illness should be emphasised.

In summary, media publicity can mislead by emphasising 'meningitis', and neglecting the importance of the vasculitic rash that accompanies septicaemia. This misinforms the public and members of the medical profession, and ultimately misdirects vigilance and resources. Clinicians and CCDCs should collaborate, preferably within the context of an outbreak

control committee, to ensure the accuracy of statements to the media. The vasculitic rash is a major feature of meningococcal disease and should be emphasised whereas headache and neck stiffness should be given less prominence in such statements.

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The authors would be interested to receive accounts of similar experiences from other districts.

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