

MUMPS – DO WE NEED TO WORRY?

'MUMPS HITS UNIVERSITIES', scream the headlines as universities set up mass vaccination programmes advising students to have the MMR job as an epidemic of mumps threatens to sweep through campuses across the country. Figures from the Health Protection Agency show an increase in mumps from about 1,500 for all age groups in 2003 to almost 2,000 cases in only the first six months of this year. We are told that most cases of mumps are among people in their very late teens and early 20s who have not been vaccinated with the MMR and are therefore vulnerable to infection (1).

Mumps vaccine was added to the UK schedule in 1988 in the form of the MMR vaccine, but during 1988-1991, in a catch up campaign, MMR vaccine was also offered to all children up until the age of school entry' (2). This means that children with a birth date from 1983 would have been included in the campaign. These children will now be 21 years of age and younger, yet this is the very age group that we are told are getting mumps because they were too old to have been given the MMR vaccine in 1988.

Outbreaks of mumps in this older age group have not suddenly started happening this year, they have been occurring throughout the north of England and Northern Ireland since the late 1990's. By 2000, cases of mumps were steadily rising, increasing by 30 per cent per year compared to 1999. In some place such as Leeds and Bradford there were increases of nine times and 30 times the number of cases between the years 2000 and 2001 (3). One third of those affected were aged over 15, just the worst time for boys to get it. In Northern Ireland 95 per cent of confirmed cases were between the ages of nine and 19 (4).

In Stockport the mumps virus identified from several cases was of the G6 genotype. The mumps vaccine used in the UK MMR is of the A genotype. The Public Health Laboratory Service advises that cross protection from the different strains should be sufficient (I do not know what studies they base this advice on), but four of the confirmed cases in Stockport had received two doses of MMR. "It is possible that immunisation against mumps is causing a mutant strain to emerge with limited or no cross protection from the vaccine strain" (5), as has occurred with whooping cough (6).

In the USA where Mumps vaccination was introduced 11 years earlier than in the UK, outbreaks of mumps occurred in 'underimmunised' groups of people, again moving from the usual 5-9 year old children to older age range (10-19). Because of the concomitant failure of the MMR to control measles outbreaks, a further dose of MMR was added to the US schedule in 1989 and since then large outbreaks have occurred in populations vaccinated with two doses of MMR which American publications are open enough to call 'primary vaccine failure' (ie, the vaccine doesn't work). This does not, however, stop the United States from requiring it as a condition for school and university entry (7).

In this UK the official line is still that two doses of MMR will solve all our problems and how important it is that children are given good 'protection' against all three diseases.

'Protection'. This is the new word used to encourage us to vaccinate our children. Children no longer need to be immune from the disease but 'protected' from it. It sounds comforting, but what does it actually mean? The only thing that vaccines can do in terms of what is called 'protection' from disease is produce antibodies. No immunologist will ever truthfully say that the antibodies from artificial immunisation (vaccination) are of as good a quality or so long lasting as those from natural disease. And even naturally produced antibodies are only one part in a long chain of mechanisms by which the body protects itself from damage by outside agents. The most important point to be aware of, however, is that antibodies levels, even if naturally acquired, do not necessarily equal immunity. This was emphasised with the mumps vaccine in Switzerland in the 1990s. Three mumps vaccines – *Rubini*, *Jeryl-Lyn* and *Urabe* (withdrawn in the UK in 1992 because it caused mumps meningitis) all produced excellent antibody levels but those vaccinated with the *Rubini* strain had a higher attack rate than those not vaccinated at all (8). Dr David Elliman, District Immunisation Coordinator for Merton, Sutton and Wandsworth Health Authority and Consultant in Community Child Health at St Georges Hospital London, says that it actually gave people mumps (9). The MMR vaccine used in the UK contains the Jeryl Lynn strain of mumps, a live attenuated virus grown on chick embryo.

Another hypothesis in the UK for the current outbreak of mumps is that as cases of mumps fell in the early 1990s, unvaccinated children had little opportunity to obtain natural immunity from contact with other children who had mumps. Well there seems to be plenty of mumps virus around – why else would people be getting mumps?

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We are told that “before the MMR was introduced in 1988 there were ‘tens of thousands of cases’”. How would anyone know? Before 1988 mumps was not a notifiable disease and 30-40 per cent of people with mumps don't have any symptoms (10). In 1995 there were still 2,023 notifications of clinical disease (11), so there must still have been many more thousands of subclinical cases (no symptoms) and that was three years before Dr Andrew Wakefield's paper in the Lancet had even suggested a link between the MMR jab and autism. The Immunisation Against Infectious Diseases Handbook, a Department of Health publication, says that before the introduction of the MMR 1,200 children were admitted to hospital every year (11). It would be interesting to know why.

Mumps disease is caused by a virus. Humans are the only known natural host. Subclinical infections are common. The peak age of incidence is five to nine years. One attack of clinical or subclinical mumps confers lasting immunity and second attacks are most unusual (12). The incubation period is an average of 18 days. The disease starts with pain and swelling in the region of one parotid gland (salivary gland in front of the ear) and fever. Neck glands and those under the tongue may become involved. After four to five days the glands on the other side may be affected as the swelling on the first side goes down. In more severe cases the person will be more ill with a high fever, dirty tongue and able only to drink fluids. In most cases the chief problems are difficulty in eating, swallowing and talking. The disease usually resolves in 10 to 14 days and there is complete recovery as a rule (10, 12).

Appropriately managed, clinical mumps (ie mumps with symptoms so you know you've got it) is not a dangerous disease. It is the complications that are dangerous. How do you avoid complications? Common sense. If a child or young adult has an infectious disease they need rest, fresh air (window open), plenty of clean water and fresh juices (especially pineapple if their mouth is feeling unpleasant) which may be drunk through a straw if it hurts to move their jaw, (10) sympathetic nursing and more rest. They do not need to be dosed with paracetamol products (eg Calpol), non-steroidal anti-inflammatories (eg ibuprofen), unnecessary antibiotics, antihistamines, other proprietary medicines and being sent back to school just because their temperature has been suppressed to a normal value. This just pushes the disease **inwards** and makes complications more likely.

The most frequent complication is swelling of the testicles and this is more usual after the age of puberty (up to 25 per cent of such cases). The swelling is generally only on one side but if it occurs on both sides a low sperm counts or sterility may follow. There may be swelling of the ovaries in girls but this does not result in sterility (12). In fact it is thought that having mumps with recognisable parotid swelling (hamster cheeks) has a protective value against getting ovarian cancer in later years (13). This is clearly a good thing as ovarian cancer generally has a very poor prognosis due to its being diagnosed late. Rarely, deafness can occur (12).

A retrospective survey by the Royal College of GPs (RCGP) published in 1974 looked at 2,482 cases of mumps treated in infectious disease units in England and Wales over the 11 years from 1958 to 1969(14). These were already severe cases as people with mumps are not usually admitted to hospital. Complications were recorded in 42 per cent of patients, the most common ones involving the central nervous system with 25 per cent of males and 18 per cent of females being diagnosed with meningitis or meningoencephalitis. All patients with complications recovered completely except for five people who became deaf, four of whom were adults. Discussing mumps meningitis the authors say,

“whether this is regarded as part of the mumps syndrome or as a complication, there seems to be a general consensus that it is a benign condition rarely giving rise to sequelae (long term effects).”

“Three patients died. In two of these there was serious underlying disease and mumps may have been unrelated to the cause of death.” The remaining patient was described as a healthy 20 month old boy who was admitted with a provisional diagnosis of mumps and suspected sore throat for which he had been prescribed penicillin by his GP. On admission there were erythematous (red) and purpuric (purple and does not go white when pressed against a glass) rashes on his arms and legs which were considered to be probably due to penicillin allergy. He was febrile with a raised heart and respiratory rate which continued to rise until he died *“suddenly, and unexpectedly, on the third day after admission”*. The

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changes found at post mortem examination lead the authors to comment: *“In retrospect, the diagnosis of mumps must be doubted in this patient.”*

‘The fact that, out of a total of 2 462 patients with mumps admitted to these hospitals over a period of years, there were only three deaths (in two of which there were other associated factors) and five cases with persistent sequelae amply confirm the essentially benign nature of the disease.’

They conclude:

“It seems clear from this survey that there is little need for general vaccination against mumps, although there might be an indication for vaccinating certain groups of the male population. Such groups might include post pubertal boys before admission to residential institutions...it should be born in mind that serological studies have shown that 90% of boys aged 14 years and over have already been infected with mumps; consequently there may be a case for preliminary antibody screening and only those males in the above group who are seronegative need be vaccinated.”

In the 1960s mumps meningitis occurred in less than 2.5 per cent of clinical cases of mumps under the age of 20 years (15). As the incidence of subclinical infection is 30-40 per cent, this means it happens in **less than 1 per cent of cases** of mumps and the prognosis is usually good (10). Mumps meningitis requires no specific treatment although lumbar puncture provides relief from intense headache and the outlook is usually excellent (10). Textbooks as late as 1987 comment on the generally benign nature and long lasting immunity conferred by wild mumps infection (12). However we are now told that the incidence of mumps meningitis can be as high as **10 per cent** (7). Maybe modern medicine is not so clever nor advanced as we like to think, and perhaps children a quarter of a century ago with less school, less vaccinations, less processed food, less central heating, less TV; more outside, more walking, more mothers at home to look after their family – were more robust.

As with measles vaccination, mumps vaccination has been associated with disease occurring at an older age which is certainly more serious in terms of the side effects in boys – orchitis, swollen testicles, is much more likely to occur as a complication in boys over the age of puberty and bilateral orchitis can, in rare cases, lead to sterility. We now just need to wait for the other side of the vaccination pendulum to swing – cases of mumps in babies.

Vaccination with mumps vaccine is associated with plenty of side effects: Balraj and Miller in a study published in 1995 (16) claim that only aseptic meningitis and parotitis are ‘causally’ linked to it. The first well documented cases of meningitis linked with the Urabe containing MMR vaccine appeared in Canada in 1987, further cases were reported in 1988, 1989 and 1990. Canada and the USA then withdrew this vaccine. The UK did not follow suit until September 1992, despite a clear causal connection having been shown. The excuse was that it was not ‘proven’. The same paper states that insulin dependent diabetes mellitus and pancreatitis have been reported to occur after measles, measles-mumps and MMR vaccine at an incidence of 1 per 250 000 doses. Nerve deafness has also been noted, though the authors say that this is anecdotal and, *“the temporal association is inconclusive although suggestive of a possible connection in some instances. Controlled epidemiological studies are needed if further evidence of causality is sought”* (these have not been done). Orchitis has been reported in Canada and after the MMR vaccine in the USA through the US vaccine adverse event reporting system (17).

The Balraj and Miller paper also considers thrombocytopenia, Guillain-Barre syndrome and allergic reactions but here they all followed the MMR vaccine so it was difficult to separate out what was due to the mumps component and what due to the measles or rubella part of the vaccine(16).

Regarding allergic reactions, *“it is difficult to precise about the incidence of these reactions in the absence of a common case definition.”* It is worrying that such case definitions are not established during initial safety trials and post marketing surveillance. *“The highest reported incidence is from New York (18) where five out of 2789 children had potentially life threatening reactions within 2 hours post-vaccination.”* The authors note that they all responded to treatment with adrenaline and antihistamines and that the reactions were, *“ more likely to be due to the vaccine excipients such as neomycin or gelatin, or residual traces of egg related antigen, than any of the viral components.”* I suspect that this would have been of small comfort to the children in whom the reactions occurred.

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After the MMR vaccine containing the Urabe strain of mumps virus was withdrawn in the UK because it caused mumps meningitis (11), the vaccine manufacturers then sold this same vaccine to South America for their MMR vaccination campaign causing a predictable epidemic of mumps meningitis. When challenged as to why vaccine manufacturers would do such a thing if they had the best interests of children at heart, Dr Mike Watson, speaker for the UK Vaccine Manufacturers Group said that the mumps meningitis was, “only a bad headache and they all recovered.” (19) Yet the (small) risk of mumps meningitis associated with the disease is the main the reason that GPs pressure parents into having their children vaccinated against mumps.

Once again we are told that a disease we once believed to be fairly harmless is much more serious than had been realised, as soon as a vaccine becomes available. This is not new. It was commented on in the nineteenth century when the smallpox vaccination became compulsory. Wait for the medical journals and newspapers to start telling us all what a dangerous disease chicken pox can be – and, of course, this will to some extent be true, because as we inject ever increasing numbers of vaccines containing mercury, aluminium, formaldehyde, antibiotics, animal and bird products as well as viral and other contaminants – into our children and adults they **will** become more susceptible to the **complications** of these diseases.

As the 1974 RCGP paper says, “*Mumps is usually regarded as a relatively mild disease which does not often cause serious complications or permanent sequelae. For this reason little interest has hitherto been taken in its prevention, but the advent of an effective live attenuated mumps vaccine in the USA has prompted a review of the disease to assess the need for such a vaccine and its probable use in any future vaccination programme.*” (14)

It seems that being vaccinated against mumps you expose yourself, or your child, to all the risks associated with the vaccine and those of getting the disease itself. I know what my choice would be.

Dr Jayne LM Donegan
MBBS DRCOG DCH DFFP MRCGP MFHom
GP & Homoeopath with a special interest in vaccination
F/T 020 8632 1634 London NW4

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