

“It is always better to be safe than sorry.”

Or so the saying goes. Yet, when it comes to the diagnosis of a potential complication and the decision of whether to test, act, refer or wait, midwives are forever having to balance the implications of living and working in a fear-based, risk-managed modern society with our more ancient role of protecting and guarding the normal.

Natural, Human Over-Reactions

On one of my very first days at midwifery school, I attended a lecture which warned us about something the lecturer called “medical student syndrome”, where health care students have a tendency, upon learning about the symptom patterns of different illnesses, to decide that they may be suffering from each or any of these illnesses ~ especially the really serious ones. Apparently, in the minds of some students, headaches can become brain tumours, any lump could be potentially malignant and exam nerves metamorphose into a severe anxiety disorder. I became quite fascinated with this idea for a few weeks; curious about why people would tend to think the worst, and, if I am really honest, somewhat disappointed when none of my friends succumbed to the idea that they might have a dreadful disease!

During my few weeks of fascination with medical student syndrome, I developed a number of personal theories about why this syndrome might occur. Initially, I thought that perhaps we humans have a natural tendency to think the worst, and I could see how people tended to apply general information to themselves; both of which are discussed in psychology literature. Later, I gathered that this ‘syndrome’ is a form of hypochondria, which is not uncommon in humans generally. (I also realised that, if health care students are more likely than usual to think that they have a disease because they have learned in school about its symptom pictures, then the exponential increase in the volume of medical information available to the public, while not a

bad thing in itself, might also increase the number of people who experience hypochondria. I wonder if there is a relationship between the volume of medical pregnancy-related web sites and the numbers of phone calls midwives receive from worried women? But that’s another article...)

In our balancing act of relating symptoms to diseases and making the right call (which, of course, no-one can get right all of the time), it is entirely possible for humans to reach one of two ‘false’ (or incorrect) conclusions. However, most of us who practise in this age of Western medicine appear more likely to make a false positive diagnosis (where we wrongly diagnose a disease from a pattern of symptoms, either for ourselves or for others, where no such disease exists) than to make a false negative diagnosis (where a disease does exist, but we do not immediately recognise it in the symptom pattern). In other words, humans have a natural tendency towards the “better safe than sorry” approach.

The problem of false negative diagnosis certainly does occur as well, and is highlighted by the MANA Quilt Project, where some of the women represented have died from complications that went unrecognised by their caregivers (Ina May Gaskin, personal correspondence 2002). Clearly, we need to remain vigilant for serious problems. But we also need to ensure we do not end up in a culture of over-diagnosis, where acting on every possible risk factor can lead to the creation of iatrogenic problems, the administration of testing procedures, drugs and interventions to women who do not need these and, by no means least, the level of fear and anxiety which can be created in the women who are subject to what often turn out to be unnecessary procedures.

The Law of Parsimony

The problems of human bias in diagnosis are discussed by Dan Mayer (2004). He uses the example of a patient who turns up in an emergency department with chest pain. While

hearing the symptom 'chest pain' in the context of someone taking a trip to the emergency department may make us initially think that the patient might be having a heart attack; if the patient is a 21 year old man, the likelihood of his chest pain being linked to a heart attack is only around one per cent, and it is far more likely that his pain is linked to anxiety or muscle strain. If the patient is a 39 year old man, then the chance that he is having a heart attack is around 22 per cent, which puts a heart attack higher up the list of possible diseases than for the younger man, but still does not make it the most likely source of his problem.

The law of parsimony states that, where multiple possibilities exist, the simplest answer is usually the correct one. The woman who calls with a bad headache at the end of a busy day is far more likely to have a temporary tension headache than she is to have fulminating pre-eclampsia. The law of parsimony doesn't rule out the possibility of fulminating pre-eclampsia (or anything else for that matter), it just means that it is one of the less likely options.

I often invite students and midwives to consider what their first thoughts are when I present the scenario of Jane; a woman who is 34 weeks pregnant and has had no complications or concerns so far and who phones to tell them she is experiencing a lot of abdominal pain. While lots of people immediately respond that they need more information (which is absolutely true), most people do have an initial thought or feeling about this.

As a result of reflecting on this exercise, some people realise that their immediate thought is that Jane might be in premature labour, or be experiencing an abruption. This has led to some midwives wondering if they have a tendency to over-react towards potential complications. Statistically, Jane is most likely to be experiencing something innocuous, such as warm-up labour, but this does not mean we can rule out a more serious problem. While doing this exercise, other midwives who have

initially said they are not worried about Jane at all have come to realise that perhaps they have a tendency to under-react and might be more likely than some of their colleagues to miss a complication.

Groups of midwives with whom I have done this kind of exercise have tended to end up concluding that the ideal response is a balanced one, where you are neither extremely worried or extremely unworried; midwives have talked about needing to "hold the uncertainty" until further information helps you make the decision. In other words, while the law of parsimony may be a useful addition to any midwife's mental birth kit, it doesn't mean we shouldn't keep the other possibilities in the back of our head until we can rule them out.

Diagnosis by Numbers?

The idea of holding the uncertainty and looking at the whole picture around the person rather than the symptoms alone is one of the things that many midwives excel at. Mayer and his evidence-based medicine colleagues suggest that the solution to the human biases that we bring to diagnosis is that we should primarily seek to better understand the statistical probabilities of the possible conditions that we may see. They argue that it is well worth assessing the mathematical likelihood that a woman presenting with symptom X will have any one of conditions A, B or C. While this is obviously useful as one tool, and certainly enables us to apply the law of parsimony, I suspect most midwives would only want to do this in a context which ~ among other things ~ acknowledges their existing understanding that symptoms may have social, emotional and spiritual as well as physical causes, and which takes the woman's own knowledge, feelings and intuition into account at an earlier point than is suggested by the evidence-based hierarchy.

However, Meyer does offer two points which I believe are worth reiterating:

- Unusual or rare presentations of common diseases occur more often than common presentations of rare diseases.
 - In other words, a woman with a very severe epigastric pain is, at least statistically, far more likely to have a severe form of indigestion or heartburn than pre-eclampsia.
- Our recall of possible diagnoses is influenced by the things that make the diagnosis stick in our minds, e.g. the severity of the problem and the fact that we might have recently seen it in another woman or heard about it from a colleague.
 - That is, we are generally more likely to be concerned about a woman whose baby feels large if we have recently experienced a baby with shoulder dystocia or heard a horror story about this.

The latter point will not be new to many midwives, and is often debated when midwives get together and discuss the topic of whether or not “you are a product of your last ten births”. It also explains why over-reactions sometimes occur. The other implication of this second point is that we are also more likely to be more concerned about those symptoms which may occasionally be linked with serious conditions (e.g. visual disturbances) than those symptoms which are not generally linked with serious conditions (such as toe pain).

This may sound very obvious, and might cause some people may wonder why I am debating such a useful mental tool. Yet I feel it needs debate, for two reasons. Firstly, while we have tended to follow Western assumptions that there are causal links between symptoms and diseases (or problems), work in a number of other areas is challenging the existence of these simple, causal links. In addition, if you talk to ten women who have experienced antepartum haemorrhage (or ten midwives

who have had to deal with antepartum haemorrhage), you may hear ten stories which have entirely different initial symptom patterns. The complex and uncertain world in which we live may require us not only to hold uncertainty while we gather information, but also to develop more sophisticated thinking patterns than are currently being promoted in Western medical circles.

The Rise of the High-Risk Scenario

This is further illustrated by a concern I have about whether some components of basic and continuing midwifery education may end up causing midwives to over or under-diagnose complications without expanding their knowledge of how to effectively deal with the uncertainty of diagnosis and complications.

Midwife teachers have an important role to play in ensuring that students have adequate knowledge of how to deal with emergency situations. Because many of these possible situations are rare, we cannot guarantee that students will encounter them in practice before they are ‘on their own’, and so need to set up theoretical learning and testing for them. Several midwifery schools in the UK use a viva to test students’ knowledge: the student is given a scenario, from which she has to make a diagnosis and then describe what her actions would be in the situation. The same kind of test is used in some of the courses offered to help already qualified midwives learn to better cope with emergencies.

In the majority of cases, the student is assessed solely on her ability to cope with the emergency scenario, and not on her ability to undertake a differential diagnosis (which, by definition, is about being able to differentiate the normal from the pathological and the safe from the risky). What I mean by this is that the students *expect* a high-risk situation to occur in their assessment, and would be highly surprised if it didn’t. Consequently, they prepare for the test by learning not only the actions which they would need to take in any one of the emergency situations, but, as they

will also be called upon to make a diagnosis from the scenario itself in a limited time-frame, they also learn what might be termed the 'quick links' between particular symptoms and their diagnosis. For example; turtling = shoulder dystocia; epigastric pain / visual disturbance = pre-eclampsia and 'woody' uterus = abruption.

We teach them these shortcuts between symptoms and complications, often without time to talk about the other things that could cause the same symptom (or other ways in which the complication might present) and these shortcuts then enable them to make the diagnosis quickly and get on with scoring points for knowing what to do. Even though we might go back and discuss the wider picture at another time, the shortcuts have been learned ~ often, because of the dislike that students have of this kind of test, better than most of the other material they have encountered during their course.

The shortcuts are not necessarily a problem in themselves; they are a permanent feature of human ways of thinking and exist at all levels of diagnosis. Midwives also have shortcuts which link the existence of protein, sugar and other chemicals in the urine with possible diagnoses, and shortcuts that link certain physical signs or symptoms with other diagnoses. The concern here arises when these links end up becoming more permanent parts of our neural nets than would be ideal ~ which goes against the idea of holding uncertainty. It is entirely possible for a uterus to feel 'woody' (especially to a less experienced practitioner) in the absence of any bleeding, and even more possible for a woman to have an abruption in the absence of a 'woody' uterus. We need to encourage ways of teaching the bigger picture of midwifery decision-making, not just the 'drills and skills', especially for those midwives who work out-of-hospital and do not have another seventeen

colleagues on hand who know the same mnemonics.

Redefining the Boundaries

More than anything, I feel it is important for us to continue to think about the decisions we make, and to keep talking with each other and developing our knowledge about decision-making around complications within the context and philosophy of the midwifery model. While it can be very useful to explore the tools of our medical colleagues, we may not always want to apply them to midwifery practice indiscriminately.

The modern culture of risk, fear and intervention around birth has led us to position ourselves as the champions of normal birth and led to a focus on keeping things normal. Our role as the protectors of the normal is a sacred and valuable one which I have no wish to challenge. However, the lines between normal and abnormal; risky and not-risky; complicated and uncomplicated are not clear. They are, in fact, very fuzzy; especially for midwives who work as women's primary caregivers and who have to make conscious decisions about when to refer, test or treat.

As midwives, our challenge is to find ways of ensuring that our decisions around potential complications are as informed and clear as they can be. It may indeed sometimes be better to be safe than sorry, but there is danger in both the over-diagnosis and the under-diagnosis of complications. Sorrow can come in many forms and, somewhat paradoxically, it seems that the way forward in ensuring safety in this area might be in our increasing realisation that the world around us is more uncertain than we ever dreamed.

Mayer, D (2004). *Essential Evidence-Based Medicine*. Cambridge University Press.