Feeling fixed and its contribution to patient satisfaction with primary angioplasty: A qualitative study

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Abstract

Background: Primary angioplasty is being used increasingly as an alternative to intravenous thrombolysis for patients with acute ST-elevation myocardial infarction.

Aims: To explore positive and negative views of patient and carer experiences of undergoing primary angioplasty.

Methods: We undertook semi-structured qualitative interviews \((n=16)\). We identified a thematic framework from transcripts then coded data according to themes identified.

Results: Participants were extremely positive about their experiences of primary angioplasty. They were impressed by the speed and efficiency of the process and their quick recovery from feeling extremely ill. Participants expressed a high degree of confidence in the procedure and many spoke of being ‘fixed’ following resolution of their symptoms. This may have been engendered by witnessing the procedure take place as well as successful treatment of a potentially fatal heart attack. The speed of resolution and feeling of being fixed led some participants to question whether they had actually had a heart attack.

Conclusions: The ‘high-tech’ efficient procedure of primary angioplasty and fast recovery contributes to high levels of patient satisfaction. The feeling of being fixed and lack of belief at having had a heart attack may have implications for uptake of rehabilitation and lifestyle changes following hospital discharge.

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Keywords: Primary angioplasty; Patient satisfaction; Myocardial infarction; Health beliefs

1. Introduction

The use of primary angioplasty as an alternative to intravenous thrombolysis for patients with acute ST-elevation myocardial infarction (STEMI) has been shown to reduce mortality, reinfarction, stroke and the need for coronary artery bypass grafting [1]. Although requiring more specialist care initially, primary angioplasty is associated with a shorter length of stay than thrombolysis and patients may be discharged home within 48–72 h of their heart attack [2,3]. Current European guidelines advocate the use of primary angioplasty as optimal treatment when it can be delivered in a timely manner within specialist, large volume centres [4].

Rates of primary angioplasty are increasing but there is considerable variation in the amount of primary angioplasty undertaken by country [5]. In the United Kingdom (UK), the majority of patients with STEMI are currently thrombolysed, although rates of primary angioplasty are increasing [6,7]. Future developments of services for the treatment of STEMI are likely to require significant service reorganisation in order to increase provision of primary angioplasty, with patients transferring from or bypassing local emergency departments to receive primary angioplasty at a specialist centre [8,9]. In England, the National Infarct Angioplasty Project Pilots (NIAPP) were set up by the Department of Health to test the feasibility of implementing a countrywide angioplasty service for patients with STEMI in ten pilot sites [10].

Despite considerable research into the clinical, and potentially economic, benefits of primary angioplasty, little research...
has been undertaken into the patient experience of this procedure. Some qualitative research into the patient experience of angioplasty has been undertaken in the United States (US), but concentrates largely on patients undergoing angioplasty as an elective procedure [11,12]. The patient experience of primary angioplasty is likely to be different to that of thrombolysis and may have an important effect upon the patient’s well-being and compliance with treatment and rehabilitation. It is therefore important to gain an understanding of key aspects of the patient experience in order to develop primary angioplasty services that are acceptable to patients.

As part of a wider evaluation of the NIAPP [13], we undertook a study of the patient and carer experience of undergoing primary angioplasty in an emergency setting, using a survey and interviews. The aim of the interviews was to identify key aspects of the patient and carer experience. The use of qualitative methods allowed us to identify issues that are important to patients and to undertake a more in-depth exploration of these issues than quantitative approaches would allow. We planned to explore the positive and negative aspects of the patient and carer experience, and then considered what contributed to patient satisfaction. In particular, we sought to include the views of patients and their carers who had bypassed their local hospital in order to be treated at a specialist centre.

2. Methods

Patients were recruited from two major teaching hospitals that were also NIAPP sites. Hospital 1 provides an angioplasty service to an extended population of 1.3 million within the capital city and Hospital 2 provides a primary angioplasty service to a population of 400,000 in the north of England. Both hospitals provide a primary angioplasty service 24 h a day, 7 days a week. For Hospital 1, patients bypassed emergency departments (EDs) at two local district general hospitals (DGH) and went straight to Hospital 1. Hospital 2 had no referral arrangements with other hospitals at the time of this study. Patients undergoing angioplasty at these two hospitals would generally be taken straight to the catheter lab when transported by ambulance. After the procedure they would be cared for within a coronary care unit for approximately 24 h before being transferred to a general cardiology ward. Ethical approval for the study was obtained from a multicentre research ethics committee and from both local research ethics committees.

Patients who were admitted to either hospital with STEMI were asked by nurses if they would like to participate in the study. We used purposive sampling to ensure we included a range of referral routes (i.e. via ED, direct to catheter lab, bypass) and then undertook maximum diversity sampling to ensure we included patients of different age, sex and time of admission. We felt that time of admission was an important sampling variable because patients may have different experiences depending upon whether they were treated in hours or out of hours with a wait for an on-call team. Patients were invited for interview and asked whether they would name a carer who we could contact for interview. We then invited all named carers for interview. Written informed consent was obtained from all participants prior to interview. All participants agreed to the interview being recorded.

Face to face semi-structured interviews were carried out within participants’ homes by one researcher (FS) not affiliated to either of the hospitals. Patients and carers were interviewed once, with interviews lasting an average of 33 min (range: 15–56 min). Carers were interviewed during the same visit but separately, with one exception where patient and carer were interviewed together. We used a critical incident technique [14] to identify positive and negative views of key aspects of the patient and carer experience. This involved participants talking through their experiences from onset of symptoms to discharge home and being asked to comment on positive and negative aspects of each step of the journey. Participants were interviewed at between one and four weeks after their procedure.

3. Analysis

The interviews were transcribed verbatim. We used the first stages of Framework [15] to analyse interview transcripts. Framework is an approach to analysis developed for policy research. The following stages of framework were undertaken: Stage 1: FS read all the transcripts to identify themes and AoC read a subset of transcripts. Stage 2: FS and AoC discussed the subset of transcripts in detail to identify a thematic framework. Stage 3: FS coded transcripts systematically according to the thematic framework. Finally both FS and AoC considered the links between the themes and the types of patients and carers reporting and not reporting the themes.

The themes which emerged in early interviews continued to do so throughout the interview process and no new themes emerged in later interviews.

4. Findings

A total of 21 patients were asked to take part and 20 patients agreed to be invited for interview. We invited 10 patients and 6 carers for interview and all agreed and were interviewed. Patient characteristics, including whether a carer was interviewed, are shown in Table 1. We achieved the diversity of sample we intended, particularly with regard to patients attending in/out of hours and those arriving directly at the hospital or being transferred.

5. Positive voices

Participants spoke in extremely positive terms of the experience of undergoing primary angioplasty. Both patients and their carers praised the care that they received highly and were clearly eager to express their gratitude towards the various healthcare professionals involved in their care.
It is brilliant, really brilliant. He couldn’t have got any better treatment if he, if he was the queen I don’t think. (carer 3)

There isn’t anything that can be improved. I give them 100%, I really do. (patient 2)

Doctors, nurses, every one of them. Couldn’t have asked for better. 100%. (patient 9)

The critical incident technique that we used involves asking for positive and negative aspects of each stage of the patient journey. We felt that we had to probe considerably harder to obtain any negative opinions from both patients and their carers. When dissatisfaction was expressed, interviewees focused on excessive car parking fees, hospital food and issues around discharge, whether back home or to another hospital for continued rehabilitation. Whilst none of the participants protested about bypassing their local ED, some carers commented upon the length of the journey to visit the patient, with carers having to make up to 2-hour journeys by public transport to visit the patient. However, despite the perception of high car parking fees and long journeys, participants appeared grateful that the patient had been treated at the specialist centre. The occasional negative opinions expressed were offered apologetically, as though they did not feel they had a right to complain.

That’s very... now that, I would hate to say it needs improvement, but that is the worst part of the hospital stay, trying to get out (Patient 1)

When they take the whatever, the lead out, you know from your groin they have to put this clamp on to stop it bleeding but it’s alright. Uncomfortable but it’s nothing is it really? (Patient 2)

6. ‘Do or die’ situation

The degree of satisfaction expressed appeared to be related to the level of gratitude participants felt at having their lives, or that of their relatives, saved. Participants believed that the decision to undertake the procedure was a life-saving decision that was made by healthcare professionals, on their behalf. Patients were undergoing angioplasty in an emergency situation where full informed consent is problematic. Some patients were too ill to recall consent, being barely conscious at the time of the decision. Those who did recall consenting often felt that they had little choice, considering it to be a life or death situation whereby they would sign anything to give them a chance of survival. Patients did not appear to be aware of any other treatment options (e.g. thrombolysis) available to them at the time.

He said ‘I’m Dr so and so, I will treat you but I want you to go to [hospital 1]. But you must give your consent to what they do’. Well I had no idea what he was talking about so I said yeah alright. (Patient 10)

They understood the gravity of having a heart attack sufficiently to want to be treated immediately. Some felt so ill that they did not care what procedure was instigated, as long as it would ameliorate their symptoms. Carers similarly felt it was the patients ‘only hope’ and feared they would lose the patient if the procedure did not go ahead.

Well I say when somebody says to you you’ve had a heart, you are in the middle of a heart attack quite honestly, whatever they said wouldn’t matter. If they said you had to have both your legs off, I mean. You know it’s, well whether rightly or wrongly you assume it’s a life or death situation. (Patient 1)

I wasn’t bothered as long as they did something to help. (laughs). I wasn’t bothered as long as it made me better (Patient 7)

Patients’ recollection of the consent process was that they were given an explanation of the risks and benefits of the treatment but they were not aware of any alternative treatments, believing that the angioplasty would be their only chance. Patients who recalled the decision to bypass their local hospital did not feel actively involved in the decision to bypass but were accepting of their passive role. There was a perception that letting the healthcare professional ‘just get on with it’ was the most important thing to do, and that it had indeed saved their lives.

7. Speed and efficiency: the dramatic recovery

Participants lauded the speed and efficiency with which they were treated and felt that they were being looked after by teams of expert healthcare professionals who knew exactly what they were doing. Some patients were particularly impressed by the modern technology used and the number of medical and nursing personnel attending to them. The level of care and attention reminded them of UK television hospital dramas such as Casualty and Holby City. Participants appeared grateful for the high standard of care and attention they received and felt that their experiences contrasted greatly with their expectations of the health service, either from their past experiences or from negative news media reporting of the health service.
“I don’t think they could have been better. From my point of view, being wheeled in there, it’s just like Holby City. Honestly it was.” (Patient 3)

The thing that I, that I was very impressed with and perhaps amazed me, having read certain negative things in newspapers etc, which one shouldn’t read, was the, the speed and efficiency at which this just came together (Patient 6)

Both patients and their carers spoke of the speed of the patients’ recovery and were amazed at the degree of improvement within a few hours of having their heart attack. Patients described how ill they felt prior to having the angioplasty, describing a lot of pain, feeling ‘dreadfully ill’, ‘really sickly’ and knowing that there was something seriously wrong with them. One carer described the patient as ‘looking like death’. This contrasted with the descriptions of the patient following their angioplasty, where the pain had resolved and the patient looked like their ‘old self’. In particular, carers who had been with the patient prior to and following the angioplasty, spoke of the ‘total transformation’ of the patient when they came out of the catheter lab.

Everything did to me, everything worked well because I was a new man when they took the drip off me, you’d think that there was nothing ever wrong with me. (Patient 4)

8. Feeling fixed

After their angioplasty, patients expressed a high degree of confidence in the procedure they had undergone. Having gone from feeling extremely ill, to being back to their ‘old self’, many appeared to believe that they had been ‘fixed’ and spoke as if the procedure had brought closure to their heart condition. They talked of the ‘problem’ being ‘sorted’, expressing relief that they had had the procedure there and then, rather than having to wait around for the procedure months down the line.

I mean, within three hours of the heart attack, I was back in a ward, back in a bed, basically fixed. (Patient 1)

They have assessed you, you know what’s wrong with you and I think it is pretty good that they do it there and then and that’s the end of it. You haven’t got to think about it, it is done isn’t it. End of story really (Patient 3)

The procedure itself may have contributed to the feeling of being fixed. In addition to being impressed at the high-technology surroundings of the catheter lab and what one patient referred to as the ‘Star Trek’ equipment, the technology enabled them to witness the artery being opened. This seemed to instill a sense of confidence in the procedure as it allowed patients to witness the ‘fixing’ taking place.

I can only comment on the fact that I saw with my own eyes that there was quite a serious problem in a major artery in my heart that was fixed within a couple of hours of it being discovered and I don’t think I could ask for better than that, so I’m sure, I’m sure it was just what was needed just at the right time (Patient 6)

Patients who had heard of thrombolysis were grateful to have had the primary angioplasty instead, as there was a perception that the angioplasty solved the problem, whereas thrombolysis was a temporary measure. They spoke in terms of pity for people who had had heart attacks but had not been offered this procedure, feeling that the level of worry and fear of having another heart attack must be higher for patients who have not had the ‘opportunity’ to have an angioplasty.

If they use a drug instead of the operation then they have to wait and that must be terrible for people, I mean it must be awful having had a heart attack wondering whether you are going to have another one. (Patient 1)

9. Was it really a heart attack?

A consequence of feeling fixed appeared to be that some patients did not feel that they had had a heart attack. This is surprising given how serious the problem seemed to patients and their carers prior to the angioplasty and appeared to be due to the speed of the resolution of symptoms. Their experience of having a heart attack was different to their expectations, and patients talked in particular of not having symptoms they would expect when having a heart attack. One patient felt that she was ‘having them [the doctors] on’ as her pain resolved so quickly. Similarly, most patients felt little pain or discomfort during the procedure, which went counter to their expectations of being treated for a heart attack.

Whether I had a heart attack or whether it was a near thing I’m not even sure now. I’ve been told I had a heart attack but it is not what I thought I would have had. (Patient 5)

In fact he looked his old self you know, as I say I think this is why it’s been hard in some ways for both of us to really grasp that he’d had a heart attack because it was almost as if, like I say it was almost as if he’d just cut his finger you know because once he’d had the procedure he looked and felt so much better. (Carer 1)

10. Discussion

Patients and carers were extremely positive about their experiences of primary angioplasty. They were impressed at the level of care they received, the speed and efficiency of the process and the rapid recovery following the procedure. Negative voices concentrated upon practical problems such as car parking fees or hospital food as well as the process of hospital discharge.

Participants felt a high degree of confidence in the angioplasty procedure, to such a degree that some patients

appeared to feel that they had been ‘fixed’. It is unclear to what degree the high levels of satisfaction were due to the angioplasty procedure itself, the care received as part of having an angioplasty, or more generally to the successful emergency treatment for a heart attack. Patients undergoing angioplasty experience short lengths of stay, principally within highly-staffed coronary care units which deliver a staff to patient ratio and level of care that far exceeds patient expectations, as well as offering support to carers [16]. Satisfaction may therefore be linked to the whole experience of undergoing primary angioplasty rather than the procedure itself.

However, we suggest that witnessing the procedure take place may heighten the level of confidence in the treatment. Indeed, previous studies have identified a high level of belief in new technologies by both patients and physicians which may contribute to higher levels of patient confidence than equivalent medical intervention [17–19].

Other studies of the patient experience of primary angioplasty support this. Gulanick et al. suggest that high levels of optimism and low levels of anxiety following angioplasty may be due to a desire to believe that the procedure was successful and to denial about possible restenosis [12]. The patients in our study had experienced speedy resolution of symptoms which they saw as a direct result of successful treatment, and enabled them to consider themselves ‘fixed’. Astin et al. similarly found that the speed of recovery following primary angioplasty led patients to question the seriousness of their condition, seeing their condition to be ‘acute’ and perceiving the treatment to therefore have been curative [20].

Patients who mentioned thrombolysis as an alternative treatment in our study appeared grateful to have undergone angioplasty. Although their perception of primary angioplasty as a superior treatment in terms of reinfarction rates may be exaggerated, patients receiving angioplasty may receive greater reassurance about their condition than those receiving thrombolysis, who frequently have to wait for subsequent angiography and have not had their arteries visualised.

Interestingly, when patients reported how they felt when they were told they were having a heart attack prior to the procedure, they felt that the procedure was a life or death procedure and sensed the gravity of their situation. After their procedure, they found it more difficult to understand that they had had a heart attack. Wiles reports that patients have an expectation that heart attacks are fatal and serious, prior to having a heart attack, and similarly reported some patients found it difficult to believe they had a heart attack as their symptoms were not what they had expected [21]. She found that patients explained their survival by distinguishing between ‘mild’ and ‘serious’ or fatal heart attacks, often believing their own to have been ‘mild’. This is consistent with the experiences of our patients who felt that they had recovered well from their heart attack and did not feel it to have been as serious as they expected it would be. The tendency to underplay the potential seriousness of the heart attack suggests that the sense of feeling fixed is due at least in part to survival of a serious health event rather than solely due to the angioplasty itself.

Although there is sparse literature available around patient experiences of angioplasty, similar positive patient experiences, particularly in relation to the speed of the process have been reported elsewhere [22,11]. Gulanick et al. found a significant minority of extreme negative reactions, referring to unmet needs around comfort in having the procedure and around decision making. However, the majority of the patients involved in their study had undergone angioplasty as an elective procedure. Our patients expressed little displeasure with comfort, possibly due to an acceptance that there will be some ‘acceptable discomfort’ in a life-saving procedure. In contrast to Gulanick, none of the patients in our study expressed concern around decision-making processes, probably due to the emergency nature of this procedure for our patients. They were comfortable with the consent process and were content to take a passive role in decision making.

Obtaining informed consent in emergency care is problematic [23,24]. Emergency physicians must judge the decision-making competency of an individual with whom they have no prior relationship, within considerable time constraints, particularly when dealing with life-threatening decisions. Patients with myocardial infarction have been shown to be more likely to consent to clinical trials in emergency medicine if they were in pain or have lower levels of consciousness, in order to expedite treatment [25]. This finding was reflected within our patients who felt they would agree to anything in order to have their lives saved and ameliorate their symptoms. Interestingly, they did not express any concerns around the consent process, despite a lack of memory of the process or knowledge about other treatment options.

11. Limitations

We were not allowed to approach patients directly and relied upon nurses in the NIAPP sites to recruit patients on our behalf. This may mean that our sample missed some negative voices. Similarly, the two sites involved were NIAPP sites with established angioplasty services, which may offer a more streamlined and efficient service than newer services which have just started to offer primary angioplasty and therefore offer an overly positive view of primary angioplasty. Although our small sample of patients expressed largely positive experiences, this does not mean that all patients who undergo primary angioplasty are highly satisfied. In this study we have focused on what contributes to patients feeling satisfied. A further phase of our NIAPP evaluation involves a quantitative survey of patients who have received different reperfusion techniques to compare levels of patient satisfaction for primary angioplasty and thrombolysis.

Our interviews took place within a month of the patient undergoing the procedure. It is possible that they were still in a phase of gratitude for the life-saving treatment, and that we would have obtained more negative voices had we interviewed patients later. However, a study looking at tension and anxiety scores following angioplasty showed no difference in scores at 4 and 12 weeks so we do not believe we would get...
significantly different results by interviewing them at a longer interval from their procedure [11].

12. Implications for future research/clinical practice

The ‘high-tech’ efficient procedure of primary angioplasty, with rapid progression from feeling extremely ill to being ‘fixed,’ may contribute to high levels of patient satisfaction. A possible consequence of this may be that patients find it hard to believe they have had a heart attack, which could have implications for cardiac rehabilitation. This is particularly important as patients are being discharged earlier and may therefore not be getting access to cardiac rehabilitation whilst in hospital. Previous research has found that patients who believe they are able to cure or control their heart condition with lifestyle changes are more likely to attend cardiac rehabilitation [26,27]. If patients do not believe they have had a heart attack and therefore do not have a condition to control, or if they believe the ‘cure’ has already occurred, this may have a negative impact upon the take-up of cardiac rehabilitation. Further research is required to ascertain whether patient beliefs and confidence in primary angioplasty are reflected in a change of behaviour or attitudes towards rehabilitation post-STEMI. Also, if reperfusion strategies are to move towards increased provision of primary angioplasty, we need to understand different patient experiences and beliefs following both angioplasty and thrombolysis. In particular, we need to understand whether the positive experiences reported stem directly from the primary angioplasty, or simply from successful treatment for a potentially life-threatening heart attack.

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References