ART THERAPY AS AN INTERVENTION TO STABILIZE THE DEFENSES OF CHILDREN UNDERGOING BONE MARROW TRANSPLANTATION

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Introduction

Bone marrow transplantation (BMT) has now become a conventional form of therapy, especially for certain hematological and oncological diseases. The life-threatening disease, the hospital admission for bone marrow transplantation to a BMT unit with single-room treatment under isolation conditions and the treatment itself all put an enormous strain on the emotional balance of the child and the whole family. Therefore, research on the psychosocial aspects of BMT and the psychotherapeutic support of the children is of growing importance. Complete psychosocial support of the affected children and their families should be part of the contemporary standards of a BMT unit. Nevertheless, literature on the psychotherapeutic treatment of bone marrow transplanted children is still rare. Lane and Graham-Pole (1994) described their art program at a bone marrow transplant unit. Kuntz et al. (1996) presented a play therapy program with children. Emanuel, Colloms, Mendelson, Muller, and Testa (1990) indicated that psychotherapeutic work with children in an in-patient setting in the acute phases of a life-threatening disease generally requires specific modifications compared to out-patient psychotherapy. The setting has to be adapted to the hospital situation. Frequency, time and duration of the sessions change depending on the physical condition of the child. The transference is much more complicated and therefore it is important to frame the therapist’s relationship with the child in the wider context of the hospital team. The competence of the child should be confirmed, his or her defense mechanisms should be respected and not challenged too boldly.

In order to better understand the emotional situation of the affected children and their families, a short recapitulation of the course of a bone marrow transplantation follows. After the indication has been established, the children are subjected to extensive diagnostic examinations. As a rule, the children often have repeated stays in the hospital over the course of several years or months for diagnostic or therapeutic reasons. Approximately 2 weeks after the renewed diagnostic procedures, the children are admitted to the BMT ward for transplantation. First the so-called conditioning is performed, i.e., eradication of the child’s own bone marrow by total body irradiation (TBI) and high doses of chemotherapy. About 1 week after this admission to the BMT ward, the transplantation is performed as an intravenous infusion of bone marrow cells via a Hickman catheter. During this time and for about 3 weeks afterwards, the children are treated in a single room under isolation conditions in aseptic surroundings.

With quite a lot of noise development from the air conditioner, laminar air flow (LAF) is established. It lets air flow to the outside without any turbulence so that dust particles are not whirled around. The water

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in the unit is aseptically filtered and toys are disinfected; they are previously packed in boxes and enclosed in air-tight plastic before disinfection under the gamma cannon. The television is outside the room, and the remote control is also packed in plastic and treated under the gamma cannon. The door is open, but care is mainly performed from the outside. On the outside are the monitoring instruments, infusomats, etc.

Whereas in the past strict isolation was considered mandatory until the leukocytes had regenerated, in the past few years it has become practice that parents and, if necessary, medical personnel can enter the room with a mask after putting on special garments and disinfecting. As a rule, the children are physically very weak after conditioning. In particular, they have problems with painful mucous membrane lesions, diarrhea, etc., as well as extreme impairment of their general well-being. Many children are subjectively very concerned by their total loss of hair. The complications can be manifold: immune attacks from the transplanted bone marrow on the body of the child, are common and can take on life-threatening proportions, depending on which organ systems are affected. Infections with rapid, septic courses are a problem, yet they generally can be managed. Particular problems are posed by systemic fungal infections. As soon as a sufficient number of leukocytes has been reached, at the earliest approximately three weeks after transplantation, thus about four weeks after admission to the BMT unit, the children can be transferred to a room on the same ward. From there, they can be released a few days later to their homes, depending on the course of their recovery. However, at home they must wear masks for about another 100 days whenever they come into contact with anyone outside the family.

Defense Mechanisms, Coping Strategies and Stress Reactions

If one asks children before an impending bone marrow transplantation or during their treatment in the BMT ward under isolation conditions how they feel at the moment, the answers are often short and simple. Quite in contrast to what one might naïvely expect, the children declare that the impending admission for transplantation does not cause them any great problems, that they feel fine and that they are quite sure that everything will go well. This unproblematic scenario that they display for others is not only reserved for consulting psychotherapists, but is usually also transmitted to the parents and the treatment team. If an examiner were to take it into his head to actively question this obvious defense mechanism which protects the children from their anxieties and keeps them so reserved and reticent, he would generally meet with their resistance, or provoke their rejection, or in the worst case, destroy the precarious balance of the psyche and incur the danger of a emotional decompensation.

To summarize the results of our research project of several years on the “Coping Strategies and Stress Reactions of 8 to 12-Year-Old Children Receiving Bone Marrow Transplantation” (Günter, Werning, Karle, & Klingebiel, 1997; Günter, Karle, Werning, & Klingebiel, 1999), the children are internally extremely preoccupied with their situation, yet to the outer world they often exhibit a perfect adaptation to the necessities of the therapy. They achieve this by implementing a variety of defense mechanisms, in particular by denying fearful, depressive and aggressive affects, by projective mechanisms and by conforming to normative expectations. In the isolation situation of the ward, especially regressive moments and desires for physical care are also evident. The children seek a close relationship to their parents and also to the nurses who take care of them. Frequently, in contrast to many adults (Aeschelmann, Schwikl, Kächele, & Pokorny, 1992), they exhibit their dependency and need for support and thus effectively limit their fears of death. Nevertheless, even in this situation they will usually try to conceal their deep, inner uncertainty from the parents, as well as from the staff members. They generally speak very little or not at all about their fears of death, their preoccupation with the physical defect, the doubts about a stable narcissistic self image, the threat of sterility, the anger and despair, all of which they are processing intensely on a preconscious level.

Yet even if this organization of defense collapses and in some cases we see partially extreme, acute stress reactions, generally the children are still initially reluctant to reflect upon their inner situation and discuss it. Instead, the complete extent of their disorientation is often manifested in actions directed at the environment. Generally, we tend to see three forms of stress reactions in the children (Günter et al., 1999):

1. Temper tantrums with states of agitation. The children begin to destroy the furniture and endanger themselves. The children experience these states in retrospect as strongly ego-dystonic:
2. Strongly regressive developments with an aggressive, tyrannical aspect towards the parents, who are not allowed to leave the room, for example. Sometimes regression reaches a stage of infant-like behavior.

3. Depressive retreat and refusal to cooperate.

**Therapeutic Interventions**

Even in these cases of an acute stress reaction, psychotherapeutic contact with the child, for example as a crisis intervention, is often not easy. The children refuse to cooperate, cling to their parents, or simply throw the examiner out of the room.

Access to the children, whether it be as prophylactic psychotherapy or in the context of a crisis intervention, can generally be decisively facilitated if one avoids too direct a confrontation with the child’s situation in the conversation, which he dreads, by inserting a medium as a type of buffer. Under the circumstances of the BMT ward, drawing is a particularly appropriate medium. Usually the children and even the adolescents gratefully accept the proposal to draw something, especially if the examiner makes it clear to them that he has no expectations of proficiency.

I personally prefer the Squiggle Game developed by Winnicott (1971) in the context of my work with BMT children, in the diagnostic interview as well as in crisis situations. The instructions are beautifully simple: I suggest to the child a drawing game and tell him that I will first draw a squiggle on the paper. The child can then make anything out of that squiggle that he wants. After that, the child can make his own squiggle on another piece of paper, and I would make something out of that, etc. Generally, the children show prompt enthusiasm. While we are drawing, a therapeutic interview develops casually. It is, however, just as feasible to offer the children art therapy in the strict sense, especially if somewhat longer therapy is planned.

**Case Report**

In the following, I would like to report an excerpt from a crisis intervention with 8-year-old Oliver. He had been transplanted 2 weeks previously due to aplastic anemia. He developed extremely aggressive states of agitation during which he wreaked havoc in his room and ran out of it, or threw cannulae, open bottles of colored disinfectant agents and other objects at the doctors and nurses.
On my first squiggle he drew a man with big ears and wrote next to it: “This is you” (Figure 1). It is remarkable that the mouth is missing. He refers to this himself and explains that he cannot seem to get a proper mouth in there. While he draws, he hides the picture from me at first. He projects, I believe, his fantasy of his own outward appearance onto me. Noteworthy are the large ears and the bald head due to hair loss. The missing mouth refers to the cracked lips from chemotherapy which hurt him. He was also unable to use his mouth at a psychological level, since he was not able to speak to anyone about his situation. Instead, he could only act in a desperate and angry form. The crucifix in the ear represents his death.
fantasies, in my opinion, while the strange arm amazingly resembles the rubber glove protruding through the Plexiglas wall which at the time was the only direct contact to other people.

He draws a squiggle next and is quite eager to see what I will make out of it. He immediately says he would have to make a duck out of it and admires my elephant (Figure 2). Without thought I had probably chosen the elephant mainly as a counterpart to his picture because it has a trunk, large ears and an imposing and powerful presence.

He draws a dragon (Figure 3). Here too he mentions that he could not draw a mouth. Finally he realizes where he could draw a mouth, and he draws one with many sharp teeth. In conversation I indicate that the dragon probably puffs powerfully.

I immediately draw a mole hole with his squiggle, with a mole in its nest (Figure 4). Without noticing I must have picked up on the topic he mentioned, the mouth (mole in German is “Maulwurf”, while “Maul” means mouth), and in addition I have implicitly referred to his need for security, for protection in my picture. He instantly knew that he would have to make a cockatoo out of the squiggle, a bird with stunning feathers and a large comb.

Actually, he does draw a fantastical beast with a comb and a big tooth in a wide-open mouth in my next squiggle (Figure 5). However, the animal is very thin, looks emaciated and has a somewhat clumsy, thick arm like the figure in the first picture. This reminds me again of the rubber glove, while the comb reminds me again of his hair, which stands up in the middle like a comb although it has thinned out considerably. Thus he continues with his topic of choice, despite my completely different offers. He is willing to use the hour for considering his situation, his experience with defects and he tries to cope with his narcissistic injury.

Oliver now goes a step further and challenges me in that he remarks he must create now great chaos. I draw from this a dog with a long snout (Figure 6), which, in retrospect, appears to me like a helpless little pup.

He now asks me to create a complete mess, out of which he would not be able to make anything. I do so,
and he spontaneously exclaims that this is a cartoon character (Figure 7). He says that he need not add anything, since it has hair (!), an eye, a nose and a mouth (!). I was quite surprised by how quickly Oliver was able to transform my squiggle and astonished about how important it seemed to him to make order from even the greatest chaos in which he found himself. I understood this to be an expression of his need to actively cope with his situation rather than to succumb to it passively.

He asked me to make an even greater confusion with the next squiggle, then he created a witch from it with just a few strokes to draw an eye and a broom (Figure 8). He was very proud of this, to have made something out of such a muddle.

I think that at this point he was working through the threat of the dangerous situation in which he found himself to be and was considering his possibilities for coping. To put it psychoanalytically, the archaic, threatening, but also protective aspects of the primary object, and of representations of the early infantile relationship to the mother, play an important role for many children during life-threatening situations.

At the end he drew a ghost with a heavily emphasized mouth (Figure 9). I felt finally that this was an expression that something had been vocalized.

In fact, I had been able to speak with him during that session about his deep-seated fears, his despair and rage. I was able to successfully encourage him, as well as his mother in the subsequent conversation, to speak about these things with each other. Subsequently, the boy calmed down quickly and persistently. In our next session, he drew a colorful city. At the very top of a mountain there was a “vacation home,” which seemed to unite aspects of his hopes to flee the isolation situation as well as—standing alone on the mountain as it did—aspects of the loneliness he had experienced.
Psychotherapeutic Functions of Art Therapy with Children on the BMT Ward

Several important functions of art therapeutic work with children receiving BMT can be summarized here. Some of these functions were already mentioned in the case described above. First there is the invitation to draw together, or in the presence of the therapist, which represents an unobtrusive offer to relate to each other. It promotes regressive tendencies in the children, making it easier for them to work on things...
which oppress them emotionally but which must be judiciously kept “under wraps” as long as they are in treatment. The regressive tendencies that are initiated often rapidly lead to representations of inner processes. Thus, in contrast to a therapeutic interview, which for these children is usually dominated by protective aspects of defense, an intense transference relationship is established in a short period of time.

Ernst Kris (1952) was one of the first to describe the regressive moments of artistic activity and called this in a general sense a regression to the primary process in service to the ego. With his famous Yellowstone Park picture in his lectures, Sigmund Freud (1916–1917) attributed to creative processes and fantasizing an important mediator function between outer reality and inner drives and fears. Thus, the “limbo of fantasy” makes it possible to conserve emotional life, organize defense and relativize frustrations and offenses in the face of threat (Loch, 1995). Mindell (1998), a Jungian analyst working with children suffering from cancer, pointed out that the regression to an archetypal nature of the images, which was induced by the illness, threatened psychic equilibrium. But this threat could be overcome by fostering creative processes.

It is not surprising that most of our childhood patients in isolation treatment on the BMT ward have vivid fantasies of flight (see Table 1, Figure 10). In the above-mentioned study, we were able to ascertain that those children who no longer had fantasies of flight or who merely exhibited fantasies of unsuccessful escape in the squiggle interview were the ones who demonstrated extreme stress reactions (Günter et al., 1997). Artistic creation in this context also affords a possibility for maintaining contact with the outer world, for developing a perspective and for representing this secondarily in an internalized form. Furthermore, this also applies to school education, which is extremely important for the children in isolation treatment. It seems helpful to offer the children educational topics which make it easier for them to ponder upon the world outside and which prompt them to let

Figure 10. Maria, 9 years, acute myeloid leukemia, “Castle with emergency exit.”
their imagination run free. Even the mere fact that something like schooldays reality exists gives the children the feeling that there is a perspective for them after the hospital stay is over. In addition, creative activity provides plenty of opportunity to face the deep-seated fears that the children are confronted with, be it preconsciously or unconsciously. One could say that they are thrown onto paper and thus projected externally and magically banned to a certain extent. At least the diffuse and therefore many times extremely threatening fears take on form through creative acts. This process can already make the fears easier to handle, often affording the children distance from them for the first time. Moreover, using the pictures as a basis, there is the possibility of communicating in the therapeutic interview about the danger of the depicted animals, etc. This indirect form of approaching their fears seems to be much more tolerable for the children than directly confronting them. They would dread being fixated to their unbearable fears. An impression of the wide variety of these threatening fears, which usually take the form of oral-aggressive fantasies or fantasies of poisoning, is summarized in Table 2. It lists the fears that the children were confronted with. 

<table>
<thead>
<tr>
<th>Pat.-no.</th>
<th>Poison</th>
<th>Sq 1</th>
<th>Sq 2</th>
<th>Oral aggression</th>
<th>Sq 1</th>
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<td>1:16 cat eats mouse</td>
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<td>1:19 hungry snake</td>
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<td>2:11 monster’s teeth</td>
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<td>3</td>
<td>1:4 poisonous snake</td>
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<td>2:11 greedy face</td>
<td>(2:9 caterpillar)</td>
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<td>7</td>
<td>1:7 vampire</td>
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<td>1:9 monster with teeth</td>
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<td>8</td>
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<td>2:9 extraterrestrial eat</td>
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<td>1:5 tarantula</td>
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<td></td>
<td>2:8 stinging bees</td>
<td>1:1 wide open mouth</td>
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<td></td>
<td>1:2 supershark</td>
<td>2:6 hypnotizing snake from the jungle book</td>
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<td>1:5 witch, natives eating tarantula</td>
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<td>11</td>
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<td>2:11 octopus</td>
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<td>2:6 hypnotizing snake from the jungle book</td>
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<td>2:8 not poisonous snake</td>
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<td>13</td>
<td>1:15 apple with seed unscrewed</td>
<td>1:13 octopus</td>
<td>1:7 vegetar. dinosaur</td>
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<td>1:17 meat hook</td>
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<td>1:21 fish-hook bait</td>
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<td>14</td>
<td>2:11 shark</td>
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Sq 1 = Squiggle interview 1 two weeks before admission; Sq 2 = Squiggle interview 2 after transplantation in single-room treatment under isolation conditions. The bold numbers show the squiggle interview number, the numbers after the semicolon indicate the picture number in the interview.
recounted in the squiggle interviews of our research project. This abundance of such fantasies is only seen in other clinical populations with life-threatening diseases—in particular, naturally cancer when the prognosis is uncertain—without bone marrow transplantation. That vampires, monsters and other creatures also play an important role in the spontaneous drawings of children with life-threatening diseases has been documented by other researchers (Bürgin, 1978; Hodges, 1981; Mindell, 1998).

Sometimes in the squiggle interviews one can directly discern the movement from extreme threat to a more regressive standpoint with differentiation of the need for protection. For example, the almost 13-year-old Jakob drew an apple with a “core extractor” (Figure 11) in his first interview 2 weeks before hospital admission for bone marrow transplantation. In a second interview 2 weeks after transplantation had been performed and still in isolation treatment, he drew a mole with an eggshell and a friendly smile which looked like a chick emerging from its hole (Figure 12).

Threatening death fantasies, however, can also be averted by a narcissistically excessive image of one’s self. The 9-year-old Alexandra began her “draw-a-man” picture (Figure 13) at first with a shadowy figure below at the edge of the path. When she decided she did not like this, she left it on the picture without erasing it or taking a new piece of paper. Instead, she drew herself in color as a radiant princess with a crown and flowers in her hand. It seems plausible, since such symbols are frequently seen in pictures of patients threatened by death, that the topic of this picture was also the shadow of death at the edge of the path.

An important function of artistic creativity while working psychotherapeutically with BMT patients is the possibility of reversing the feeling of passive helplessness to activity with the aid of creativity and the motor activity involved. It reminds us of the stupid younger son in the Grimm’s “Fairy Tale of One Who Went Out to Learn How to Fear”: He slays all of the ghosts threatening him and therefore, feels no fear. This is a defense mechanism that was described by Freud in “Beyond the Pleasure Principle” in the context of children’s games (Freud, 1920). A beautiful example of this type of denial of fear is the behavior of the 5-year-old Jörg: In a session with the art therapist of the BMT ward, he colored his whole piece of paper, as well as the blotting pad underneath completely black, squealing all the while joyfully. If one would interpret the picture without any background information on the artist and on the situation, one could possibly suspect a deeply depressive mood, one which the boy, however, may have been able to avert by just this particular artistic expression.

Being able to make one’s self understood without having to talk is very important for many children in the life-threatening situation of the BMT ward. In some art therapeutic sessions in the isolation room, in fact, almost no talking takes place. The atmosphere of such sessions can resemble the situation in which a small child is playing quietly and needs the presence of the mother, yet he would be disturbed in his game if the mother were to speak to the child. Winnicott (1958) described the “experience of being alone while someone else is present” (p. 417) as the basis for the capacity to be alone and thus as an essential basis for emotional development. In this manner—many times in fact for the actual duration of time that the therapist is present—the child and parents are able to free
themselves a bit of each other. This relieves them from their reciprocal worries about each other, something that is very important for both.

I am reluctant to conclude without warning not to use this technique indiscriminately. On the one hand, it is prerequisite that one has had reliable therapeutic training, and if the squiggle interview is applied, psychoanalytic training as well if possible. Introduction of a medium cannot compensate for deficits in psychotherapeutic technique. Also, there is a risk that the defenses can be undermined due to the rapid access to inner processes that results from art therapeutic techniques. Therefore, one must be particularly sensitive to the importance of letting the child lead the process and consistently give him the choice of rejecting or correcting the examiner’s interpretations.

Finally, one must beware of projecting one’s own assumptions into the pictures although this can be very tempting. Without an exact knowledge of the context, of the transference and countertransference relationship, of the course of the consultation, the pictures are meaningless, at best a transfer surface for the fantasies of the beholder.

Summary

The paper describes psychoanalytically oriented art therapy interventions with children who had to undergo BMT. Winnicott’s Squiggle drawing technique was used to gain access to the children’s emotional life. This proved to be particularly difficult during hospitalization under isolation conditions. The children activated a number of defense mechanisms in order to be able to adapt themselves to the life threatening situation and to cooperate with the necessities of the treatment. Taking into account the importance of these defense mechanisms, therapeutic activities must be aimed at stabilizing these defenses. But at the same time therapy must open up the chance for the patient to express his anxiety, his anger and his feelings of desperation. A case report of a crisis intervention was presented to illustrate this kind of therapeutic work on a pediatric BMT unit.
References


